A CLINICAL STUDY OF THE TREATMENT AND EARLY PROGNOSIS OF LUPUS ERYTHEMATOSUS DISCOIDES.

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INTRODUCTION TO THESIS.

The object of this thesis is to advance the treatment of Lupus Erythematosus Discoides and to indicate a method of forecasting an early prognosis of the disease.

A series of 56 cases of the disease, which have been clinically investigated and then treated with Mapharside, will be presented in an attempt to assess the efficiency of arsenic in the treatment of Lupus Erythematosus Discoides.

Another series of 74 cases will be described, in which further clinical investigations of the disease were carried out and treatment given by methods of therapy selected by the reaction of the lesions to certain ointments. An endeavour also has been made in this series to forecast an early prognosis in cases of Lupus Erythematosus Discoides.

PART I.

PART I.

INTRODUCTION

In part 1 of the thesis, 56 cases of Lupus Erythematosus Discoides treated with Mapharside and the results thereof will be described and discussed. A comparison will then be drawn between these findings and those reported by writers using gold and bismuth, the two metals most commonly used in the treatment of the disease.

The above investigations were carried out in an attempt to assess the efficiency of arsenic in the treatment of Lupus Erythematosus Discoides and to determine what place, if any, the arsenical compound Mapharside should occupy in the list of valuable therapeutic agents in the treatment of the disease.

Chapter 1.

CLINICAL ASPECTS OF LUPUS ERYTHEMATOSUS DISCOIDES.

Lupus Erythematosus Discoides was given this title by Cazenave (1851). Previous to this date, the condition had been described under the headings of Erytheme Centrifuge by Biette in 1828, and Seborrhoea Congestiva by Hebra in 1845. All three writers referred to the discoid and chronic type of the disease. Twenty one years later, Kaposi (1872) described the acute or subacute disseminated type.

Of these two main varieties of the disease, the chronic and discoid form is by far the most common, constituting all the cases in this thesis and according to Sequeira (1947) about eighty percent of all cases in this country. The remaining twenty percent are of the disseminated type.

The incidence of the disease according to Pollitzer (1924) is 0.035% or roughly 1 in 300 cases seen in Dermatology. On examining the records of The Royal Infirmary, Glasgow, over a period of twenty years from 1928 to 1947, 512 cases of Lupus Erythematosus Discoides were found in a total of 92,212 new dermatological cases seen in the Outpatient Dispensary. This gives a somewhat higher ratio of 1 in every 180 new cases seen and is in agreement with Weiss (1936) whose ratio was

1 in every 155 new dermatological cases. In this survey, the age of the patients varied from seven years to seventy six years with an average age of thirty six years. Of the 512 cases of the disease, no less than 271 were in the age group thirty to forty years. The sex ratio was 332 females to 180 males or roughly 2 to 1.

The present series of 56 cases is in agreement with this, as the average age of the patient is thirty four years and the sex ratio of 40 females to 16 males, although slightly higher than the above ratio, is typical for the disease.

The initial lesion of Lupus Erythematosus Discoides consists of a small erythematous macule or papule which is usually covered with a greyish-yellow adherent scale. The primary lesion enlarges peripherally and eventually forms a discoid plaque which differs in size and shape, and is rose pink to deep purple in colour.

The border is usually elevated and infiltrated while the centre is depressed, paler in colour and shows either a scaly or unbroken epidermis in which dilated or plugged follicular openings may be seen. The scales, varying in colour, may be scanty or abundant and they are usually anchored firmly to the underlying epidermis by means of horny projections from their surface. This is a well noted characteristic of the disease.

In some cases erythematous redness predominates, while in others, seborrhoea-like scaling is more pronounced.

When the disease undergoes involution, the patches may resolve without trace but almost invariably typical scars are left. These are superficial, flat, smooth and dull white in colour, although occasionally they show telangiectasis.

The erythematous and seborrhoea-like varieties of the disease are the common superficial type and are most frequently seen on the face, especially on the malar prominences, the bridge of the nose and the ears. Another type of the disease less commonly seen on the face is the telangiectatic variety. In this, rosy red or deep purple plaques develop. The surface is often slightly oedematous and there is an absence of scaling and dilated follicles. Typical scarring however not infrequently follows involution of this type.

The scalp also is frequently attacked and in this area involution usually takes place with more pronounced scar formation. Less common sites for the disease, are the dorsum of the hands and fingers, the conjunctivae and mucous membranes of the mouth and lips. Lesions in the latter situation may be present alone, but more often they coexist with cutaneous lesions. Culver (1915) describes them as

occuring in as high a proportion as 27% of all cases. This was not found to be the case in this series. A characteristic feature of these lesions is a very definite dilatation and radial arrangement of the superficial vessels in the border of the patch.

Subjective sensations are usually slight or absent and the course of this type of the disease is normally chronic, afebrile and benign.

Chapter 11.

HISTOPATHOLOGY.

The histopathological changes in Lupus Erythematosus Discoides are usually diagnostic if a specimen for biopsy is obtained from a fairly recent lesion which has not been subjected to irritating or stimulating preparations.

Goeckerman and Montgomery (1932) were of the opinion that the earliest pathological changes in Lupus Erythematosus Discoides consist of a dilation of the superficial blood-vessels and lymphatic channels while epidermal changes are secondary to these inflammatory changes in the cutis.

They considered that characteristic pathological changes, a combination of which permits a definite diagnosis of Lupus Erythematosus Discoides to be made consist of :-

Relative and absolute hyperkeratosis.

Keratotic plugging of the hair follicles and sweat ducts. This plugging can be recognised histologically long before it is recognised clinically.

Preservation or even thickening of the granular layer.

Acanthosis of the prickle-cell layer and liquefaction degeneration of the basal cell layer.

In the cutis, there is perivascular, chiefly lymphocytic, infiltration about the dermal

> appendages, dilation of the superficial capillaries and lymphatic vessels, oedematous changes in the collagen and destruction of elastic tissue by the infiltration. There is no proliferative or obliterative changes in the walls of the deeper blood vessels.

The writer has made use of this combination of pathological changes in biopsy specimens to confirm the clinical diagnosis of the disease in several cases.

Chapter 111.

INTRODUCTION TO MAPHARSIDE THERAPY.

For many years gold and bismuth have been regarded as the most successful metals in the treatment of Lupus Erythematosus Discoides. During this time however, cases which have improved with one of the organic arsenical preparations have been reported.

Two French writers Ravout and Bocage (1926) discussed a series of 23 cases treated by injections of Novarsenobenzol. They recorded their results in only 17 of these, as 6 of their cases reacted so severely to the drug that treatment had to be stopped after a few injections.

Of the 17 cases, 7 were apparently cured and 4 greatly improved.

Only 7 of the cases received between 15 to 20 injections without evidence of toxic reaction and the writers were of the opinion that it was the exception rather than the rule for patients to receive prolonged treatment with this arsenical compound and show no complications.

MacCormac (1934) described 2 cases treated with Stovarsol. Both of these showed improvement but only after a severe arsenical reaction. He was of the opinion

that this reaction had some unknown beneficial effect on the disease.

Weiss, Conrad and Pfaff (1941) treated a series of 28 cases of the disease with Bismuth arsphenamine sulphonate - "Bismarsen". Of their cases, 14 were cured and 8 markedly improved. Complications from treatment arose in 4 cases.

Hymen (1944) in a discussion of a case of Disseminated Lupus Erythematosus treated with Mapharsen reported that he had treated a few patients suffering from Lupus Erythematosus Discoides successfully with this compound.

It was decided therefore to assess the efficiency of the organic arsenicals in the treatment of the disease. For this purpose Mapharside was selected for, as stated previously, Hymen (1944) had proved it to be successful in some cases and Anwyl-Davies (1943), Moore (1944) and others have claimed it to be the least toxic and yet the most powerful spirochaeticidal of arsenical compounds.

Chapter IV.

CHEMISTRY, PHARMACOLOGY AND MODE OF ACTION OF MAPHARSIDE.

Mapharside is the name given to the trivalent arsenical preparation which is the hydrochloride of meta-amino-para-hydroxy-phenyl arsine oxide. It is an arsenoxide of arsphenamine and was first prepared by C.S. Hamilton for use by Tatum and Cooper (1932). Naming the preparation 158 or Mapharsen, they found it to have a higher therapeutic index in rabbit syphilis than any other single anti- syphilitic agent.

It is a pure chemical, obtainable in crystalline form and contains 29.01% of metallic arsenic. It is stable when stored under dry cool conditions but on exposure to air and moisture, it slowly oxidises to the pentavalent state and so becomes less toxic and less efficient therapeutically.

The drug is readily soluble in water and forms a slightly acid solution , but for intravenous injection, it is supplied in ampules with a sufficient amount of anhydrous sodium carbonate and purified sucrose to make an aqueous solution practically neutral.

Within a few minutes of injection, the compound begins to disappear from the blood stream and after three to four hours, only minute traces of it are present in the

circulating blood. According to Moore (1944) analysis of the tissues show that as the arsenic disappears from the blood stream, it is promptly taken up and presumably stored by the spleen, liver, kidneys and to a lesser extent the skin. He also states that elimination of the arsenic as both inorganic and organic compounds from the body takes place largely by the urine and faeces, although small quantities may also be excreted in sweat and saliva. Approximately fifty to ninety percent is execreted within one week and the remainder is apparently stored in the tissues and slowly excreted over a period of many weeks after the last injection.

Mapharside may produce its beneficial effects by means of some property as yet unknown, which can destroy the causative toxins of the disease and so prevent them from acting on the skin.

Eagle (1938) has shown the drug to be lethal to the Spirochoeta Pallida in vitro in dilutions which approximate those in which the metal is found in the body tissues. This brings forth the suggestion from the writer that Mapharside may be lethal not only to the Spirochoeta Pallida but to other organisms. It is possible, although definite evidence is lacking, that Tubercle Bacilli, Streptococci and Staphylococci may all be destroyed by the

arsenic and so Mapharside may act by eradicating foci of these or some other causative organism present in the body. As it has been shown that definite quantities of arsenic are stored by the skin, this bactericidal effect may take place in the dermis itself. On the other hand the arsenic may combine with one or more of the constituents of the dermis or epidermis thus rendering them immune from the causal organisms or toxins. Already damaged tissues however react in the normal manner and produce fibrosis and scar tissue. However if the lesions are early, they may heal without trace of previous destruction of tissue.

These modes of action are entirely hypothetical and it must be admitted that at present, the true method by which Mapharside acts on the disease is still unknown.

Chapter V.

CONTRAINDICATIONS FOR USE OF MAPHARSIDE.

A disease such as Lupus Erythematosus Discoides which is not dangerous in itself, but which occasionally can be exascerbated into the fatal disseminated type of the disease, calls for caution in the application of treatment. This is especially so when the therapy to be used involves the administration of a dangerously toxic drug.

The main contraindication to Mapharside treatment is the presence of organic disease of the liver or kidneys. The appearance of urobilinogen or albumen in the urine before or during treatment is therefore an indication against arsenic therapy. Similarly patients with disease of the spleen should not be given Mapharside injections.

Active Tuberculosis in the lungs or other organs is also a major contraindication to Mapharside therapy since an acute dissemination of the Tuberculosis may be caused by the administration of the arsenic. Under this heading also fall myocardial disease and patients who are advanced in years or in a poor state of nutrition.

A temporary contraindication is the occurence of

any acute infection accompanied by pyrexia or the appearance of skin rashes which may lead to the development of an arsenical dermatitis.

The final contraindication to Mapharside therapy which shall be mentioned, is intolerance of the patient to the drug.

Pregnancy is not a contraindication although the patient must be watched very carefully for evidence of intolerance to the drug, and signs of toxaemia.

Chapter Vl.

TECHNIQUE OBSERVED IN TREATMENT.

Before treatment was commenced, a careful personal and family history was obtained from each patient and all had an X-ray of chest and nasal sinuses taken and ten c.c.'s of blood withdrawn for a Wasserman and Kahn test.

The teeth were examined and X-rayed if necessary and removal by the patient's dentist was advised where signs ofcaries or sepsis was found.

In each case the urine was tested for reaction and the presence of albumen, sugar and urobilinogen. These tests were repeated before each subsequent injection.

For administration, the Mapharside was dissolved in ten c.c.'s of sterile water and well aereated to remove any excess Carbon dioxide formed by the sodium carbonate. The solution was then rapidly injected intravenously, the total time from the insertion of the needle into the vein to its withdrawal being less than thirty seconds. This was done to avoid venous spasm and subsequent pain along the course of the vein which is prone to occur if injection of Mapharside is slow.

All patients were advised to fast for one hour

previous to injection and for three hours after it to prevent the nausea and sickness which often accompanies the administration of organic arsenic by injection. Weiss et al. (1941) in their cases treated with Bismarsen advised the administration of Ascorbic acid to diminish this reaction but in the present series, no Vitamin C was given.

56 cases were treated and all attended as out-patients and received injections at weekly intervals. The cases were divided into two groups:-

(a). A small group, 14 in number, received weekly injections of 0.04mgms Mapharside for ten weeks. This was followed by a rest period of four weeks to lessen the risk of cumulative effect, and then a second course of ten weekly injections of 0.04mgms was given. The total amount of Mapharside for the full course was therefore 800mgms.

(b). The second and larger group, 42 in number received weekly injections of 0.06mgms Mapharside for ten weeks. A rest period of four weeks followed and then another similar course of treatment was given. The total amount of Mapharside for the full course in this second group was therefore 1200mgms.

Full courses of treatment were given unless contraindications for the continuation of the drug appeared.

The above dosage system was chosen, as the maximum effect from the drug was desired at the outset. Initial graduated doses were not administered. Theoretically, these are supposed to lessen the risk of constitutional symptoms due to therapeutic shock, but according to Moore (1944) the frequency and severity of these symptoms are not increased to any appreciable extent by larger doses of the arsenical.

The reason for the small number of cases in the first series is that in the overwhelming majority of cases, tolerance to Mapharside was found to be no less with 0.06gm than with 0.04gm. It was also hoped that results might be more rapidly obtained.

Chapter Vll.

ANALYSIS OF CASES.

An analysis of the 56 cases of Lupus Erythematosus Discoides treated with Mapharside at the Skin Department, Royal Infirmary, Glasgow, shall now be made.

All cases treated were selected irrespective of duration and/or extent of the disease. None of the 56 cases had received treatment in the six months period prior to the commencement of Mapharside injections. 22 of the cases however had received gold or bismuth treatment at some time or other, previous to this six months time limit. The remaining 34 cases were new and had received no previous treatment whatsoever.

Of the 22 patients who had received treatment prior to Mapharside therapy, 11 had had courses of bismuth, 7, treatment with gold preparations, and 4 of the 22 cases had had both methods of treatment.

Of the 56 cases, 40 were female and 16 male. This is a typical sex ratio. The ages varied from eighteen years to sixty eight years and the disease had been present from two months to twenty years.

9 patients (Cases 8, 9, 19, 33, 37, 39, 42, 46, 47,) gave

a history of glandular Tuberculosis in childhood. In all cases the Cervical glands had been affected. Only 3 of these patients (Cases 9, 42 and 47) however, showed positive findings in an X-ray of chest but in each case the lesions were apparently healed and of old standing, showing as calcified foci. I quote Case 9 herewith as typical:-

Case 9. S.R. F. 24 years.

Present condition 22/2/46.	Scattered patches of Lupus Erythematosus on both temples - four years duration. Typical "Batswing" lesion also present. Shotty glands present in right side of neck with old incision scar in right posterior triangle of neck.
Previous history	Measles and Scarlet fever age seven years. Glandular Tuberculosis right side of neck. Approximate age nine years.
Family history	Two children alive and well. Nothing relevant.
Previous Treatment	2.4gm Bismuth metal in 1942. Two months Sulphonamide therapy in 1943.
X-ray of chest .	"Opacity projecting into right costo-phrenic angle. This is an intrapulmonary calcified tuberculous lesion".
X-ray of sinuses.	"Appear clear".
Present Treatment.	800mgm Mapharside.

Other 3 patients (Cases 41, 48 and 51) also gave

positive X-ray plates of the chest. In patients 41 and 45, no other signs of Tuberculosis could be found and the lesions were again described by the Radiologist as inactive and of old standing. In case 48 however a history of haemoptysis four years previously was obtained and the X-ray report in this case was -"Numerous healed and calcified foci are present in both apices. No evidence of recent activity seen."

2 cases (22 and 31) gave a family history of Tuberculosis. In neither case was there any trace of present or past active Tuberculosis in the patients themselves.

To summarise therefore, 14 cases out of a total of 56 cases of Lupus Erythematosus Discoides had tuberculous connections.

X-ray of nasal sinuses revealed 8 patients with Mucosal changes. 5 of these (Cases 2, 16, 34, 38 and 51) were slight and confined in each case to one antrum. The other 3 cases (40, 49 and 55) however, were more severe and showed marked loss of translucency in both antra.

1 patient (Case 14) gave a history of Pernicious Anaemia of eight years duration. The anaemia was controlled by injections of Neo-hepatex every three weeks and an investigation of the patient's blood before treatment

commenced revealed no abnormalities.

Case 44 became pregnant mid-way through the first course of treatment. Injections were discontinued at the end of this first course as the patient had a history of previous miscarriages.

Wasserman and Kahn results were negative in all cases.

A precis of the cases is now tabulated - SEE TABLE I. For a fuller report see Appendix.

TABLE I.

No	Name	Sex	Age	Distribution	Duration	Previous Treatment: Sulphonamides	Previous Treatment: Gold Injections	Previous Treatment: Bismuth Injections	Mapharside Injected	Result	Remarks
GROUP A											
1	W.J.	M	31	Nose, cheeks and lobes of ears	6yrs	—	—	1941 40, Bi Metal	800 mgm	Markedly Improved	—
2	C.O.	F	32	Batswing and left ear	2yrs	—	—	—	800 mgm	Markedly Improved	—
3	E.L.	F	40	Nose and forehead	3yrs	—	—	—	370 mgm	Slightly Improved	Developed Albuminuria
4	M.G.	F	45	Nose	5yrs	—	1942 10, Lopion	—	800 mgm	Markedly Improved	—
5	E.F.	F	20	Nose and cheeks	4mths	—	—	—	720 mgm	Cured	—
6	C.D.	F	36	Scalp and nose	10yrs	—	—	—	800 mgm	No Change	—
7	M.K.	F	25	Forehead	3yrs	—	1943 10, Myocrisin	1944 10, Bi Metal	800 mgm	Cured	—
8	J.M'Q.	F	57	Cheeks	3yrs	1943 6months	—	—	800 mgm	Slightly Improved	—
9	S.R.	F	24	Batswing and temporal regions	4yrs	1943 2months	—	1942 12, Bi Metal	800 mgm	Markedly Improved	—
10	I.G.	M	52	Batswing and lobes of ears	15yrs	—	—	1940 12, Bi Metal	800 mgm	No Change	—
11	A.C.	M	43	Cheeks and temporal regions	20yrs	—	1940 36, Myocrisin	1944 20, Bi Metal	800 mgm	No Change	—
12	S.H.	F	42	Temporal regions	15mths	—	—	—	400 mgm	Cured	—
13	E.R.	F	22	Nose and cheeks	1yr	—	—	—	800 mgm	Markedly Improved	Nausea severe Defaulted 4mths
14	F.T.	M	38	Nose and cheeks	6yrs	—	—	—	800 mgm	Slightly Improved	—
GROUP B											
15	M.M'G.	F	23	Nose and left cheek	2mths	—	—	—	1200 mgm	Cured	—

No	Name	Sex	Age	Distribution	Duration	Previous Treatment: Sulphonamides	Previous Treatment: Gold Injections	Previous Treatment: Bismuth Injections	Mapharside Injected	Result	Remarks
16	E. P.	F	18	Batswing	3yrs	—	—	—	360mgm	Cured	—
17	C. R.	F	33	Nose	2yrs	—	—	—	1200mgm	Markedly Improved	Recurrence on forehead 20mths
18	M. Y.	F	39	Batswing	12yrs	—	—	—	1200mgm	No Change	—
19	M. F.	F	22	Cheeks and nose	14mths	1945 5months	—	—	600mgm	Cured	—
20	G. N.	F	57	Cheeks, nose and neck	18mths	—	—	1944 10, Bi Metal	1200mgm	Slightly Improved	—
21	W. G.	M	29	Batswing	2yrs	—	—	—	1200mgm	Markedly Improved	Defaulted 19mths
22	J. M'G	F	29	Nose, cheeks and forehead	6mths	—	—	—	1200mgm	Markedly Improved	—
23	E. H.	M	30	Nose and forehead	3½yrs	—	—	—	1200mgm	Cured	—
24	T. S.	M	33	Nose and cheeks	3yrs	1944 4months	1944 16, Myocrisin	—	1200mgm	Markedly Improved	—
25	J. G.	F	28	Cheeks and scalp	6yrs	—	—	1942 15, Bi Metal	1200mgm	Markedly Improved	—
26	W. H.	M	32	Ears and scalp	4yrs	—	1943 15, Myocrisin	—	1200mgm	No Change	—
27	A. M'L	F	26	Nose and right cheek	2yrs	—	—	—	1200mgm	Cured	—
28	J. D	F	32	Cheeks and scalp	3yrs	—	—	—	300mgm	Slightly Improved	Developed an Arsenical Dermatitis
29	A. W.	F	28	Batswing	4yrs	—	—	—	1200mgm	Markedly Improved	—
30	S. F.	F	40	Left cheek	2yrs	—	1945 12, Myocrisin	—	1200mgm	Cured	Recurrence right cheek and chin 12mths

No	Name	Sex	Age	Distribution	Duration	Previous Treatment: Sulphonamides	Previous Treatment: Gold Injections	Previous Treatment: Bismuth Injections	Mapharside Injected	Result	Remarks
31	R.M'Q	F	26	Nose	4yrs	—	—	—	1200 mgm	Markedly Improved	—
32	A.L.	M	45	Cheeks and forehead	6yrs	—	1941 10, Iopion	1943 12, Bi Metal	1200 mgm	Markedly Improved	Relapsed 6 mths
33	J.C.	F	33	Ears, nose and fingers	7yrs	—	—	1940 20, Bi Metal	1200 mgm	No Change	—
34	M.P.	F	21	Right cheek and nose	6 mths	—	—	—	600 mgm	Cured	—
35	A.S.	F	68	Forehead and nose	18 mths	—	—	—	1200 mgm	Markedly Improved	—
36	C.M'P.	F	38	Batswing	2yrs	—	—	1944 10, Bi Metal	900 mgm	Cured	—
37	T.H.	M	32	Lobes of ears and cheeks	5yrs	—	—	—	1200 mgm	No Change	—
38	P.L.	F	34	Nose	1yr	—	—	—	780 mgm	Cured	—
39	J.W.	F	30	Right cheek	4mths	—	—	—	1200 mgm	Cured	—
40	M.D.	F	25	Nose, forehead and neck	4yrs	—	—	—	1200 mgm	No Change	—
41	W.J.	M	27	Left cheek	2yrs	1945 4 months	1944 20, Myocrisin	—	1200 mgm	Cured	—
42	M.F.	F	29	Batswing	4yrs	1943 6 months	1942 12, Myocrisin	—	1200 mgm	Slightly Improved	—
43	H.M'L.M		32	Left cheek	18 mths	—	—	—	900 mgm	Cured	Recurrence after 6 months
44	J.M'C.	F	30	Left cheek and ears	5mths	—	—	—	600 mgm	Markedly Improved	—
45	R.S.	M	42	Nose and forehead	4yrs	—	1943 20, Myocrisin	—	1200 mgm	Cured	—

No	Name	Sex	Age	Distribution	Duration	Previous Treatment: Sulphonamides	Previous Treatment: Gold Injections	Previous Treatment: Bismuth Injections	Mapharside Injected	Result	Remarks
46	H.W.	M	35	Both cheeks	6½ yrs	—	—	1943 20, Bi Metal	1200 mgm	Cured	—
47	J.N.	F	33	Forehead, nose and cheeks	4yrs	1944 4months	1943 15, Myocrisin	1944 10, Bi Metal	1200 mgm	No Change	—
48	G.S.	F	34	lower lip and right cheek	3yrs	—	—	—	1200 mgm	No Change	—
49	S.M.	F	48	Scalp and left cheek	4yrs	—	—	1943 20, Bi Metal	1200 mgm	Slightly Improved	—
50	J.L.	F	22	Right cheek	18mths	1945 3months	—	1945 10, Bi Metal	1200 mgm	Cured	—
51	J.M°K	F	29	Both cheeks	2yrs	—	—	—	1200 mgm	Markedly Improved	—
52	W.W.	M	24	left temporal region and nose	2yrs	—	—	1944 15, Bi Metal	1200 mgm	Cured	—
53	C.R.	F	38	left ear and chin	3yrs	—	—	—	480 mgm	No Change	Developed an Arsenical Dermatitis
54	A.W.	F	25	Bats wing	5yrs	—	—	—	1200 mgm	Markedly Improved	Relapsed 8mths Defaulted 20mths
55	T.M°C.	M	30	Nose and fingers	6yrs	—	—	—	1200 mgm	No Change	—
56	H.M.	F	45	Right cheek and lobe of right ear	18mths	—	—	—	780 mgm	Cured	—

Chapter Vlll.

RESULTS OF TREATMENT

In all cases in which improvement occurred, there was a change in colour of the patches of the disease from a bright red or purple to a much paler shade. This was accompanied by a flattening and lessening of the infiltration of the border and a decrease in scale formation in the centre of the lesions. In some cases, this change was rapid and sudden as for example Case 12 in which all erythema and infiltration of the borders of the two areas had disappeared after four injections and the diseased tissue had been replaced by depigmented but sound scar tissue within two months of the start of treatment. In most of the cases however, changes were gradual but steadily progressive.

On healing, typical scar tissue usually remained at the site of the lesion, although in the erythematous type of lesions, the scarring was minimal and in some cases was entirely absent.

This minimum of scarring was also noted by McKenna (1930) when using bismuth as a method of therapy.

2 patients Cases 1 and 4 showed a peculiar reaction to the drug. Within a few hours of each injection, the

lesions became hot, burning and fiery red in colour. The reaction was unaccompanied by any constitutional upset, and rapidly subsided in twenty four to thirty six hours. In both cases, the reaction gradually lessened and disappeared after the first few injections.

Another peculiar reaction to the drug was observed in Case 51. To illustrate, here is the case record:-

J.cK. F. 29 years.

26/7/46. Typical patches of Lupus Erythematosus Discoides present on both cheeks. Borders infiltrated and scaling slight and silvery.
Treatment started. 0.06gm Mapharside administered.

27/7/46. Patient reported complaining of shivering, perspiring, nausea and headache in the evening after injection. General condition much improved this afternoon but the areas of Lupus Erythematosus are very fiery and red. Edges of the patches are oedematous and raised. Urine normal.

2/8/46. General condition remained well. Lupus patches much paler . Urine clear.
0.06gm Mapharside given.

9/8/46. Patient reports that shivering and headache were again experienced in the evening after the injection but to a less marked degree than after the first injection. She states that patches of Lupus Erythematosus however, again became very fiery and itchy. Urine normal today.
0.06gm Mapharside given.

16/8/46, No constitutional upset was noted after third injection. Slight local irritation was still present. Urine normal.
0.06gm Mapharside given.

23/8/46. Local irritation after fourth injection very slight indeed. Urine clear. 0.06gm Mapharside given.

30/8/46. No reaction either locally or generally was experienced subsequent to fifth injection. Patient completed both courses of Mapharside with no further local or general upset.

This case is very similar to Cases 1 and 4 but in addition to a local reaction, this patient also experienced constitutional upset. The reaction in this case (51) may be regarded, in the writer's opinion, as a type of Jarisch-Herxheimer reaction and although causing discomfort to the patient, is of little practical significence. This reaction is not considered beneficial to the patient or necessary for a good result although in gold treated cases Smith (1934) states that mild reactions to the drug, similar to the foregoing, are desirable.

In a disease such as Lupus Erythematosus Discoides one must be careful about using the term "cure", in the sense in which one speaks of a cure in Gonorrhoea by Penicillin, as only time will tell whether another lesion may or may not appear on the site of an apparently cured lesion or on a different area. The term "clinically cured" would be more accurate to describe the disappearance of the lesions or their replacement by sound scar tissue. Marked

improvement was used as a term to describe lesions in which clinical activity was absent but which were not replaced completely by sound scar tissue.

Adopting these terms therefore, the results in the 56 cases at the immediate cessation of treatment with Mapharside might be classified as follows:-

TOTAL	CLINIC.CURED.	MARKEDLY IMPROV.	SLIGHT.IMPROV.	NO CHANGE
56	20 (35.8%)	17 (30.4%)	7 (12.4%)	12 (21.4%)

It appears therefore that at the cessation of treatment 20 (35.8%) of the cases were clinically cured or arrested with Mapharside and a further 17 (30.4%) greatly improved. A total of 37 cases therefore gave satisfactory results. The remaining 19 (33.8%) cases could be described as unsatisfactory or failures.

The results of Mapharside treatment on the 22 cases which had received previous treatment with gold and/or bismuth will now be analysed.

As stated 11 of the cases had received previous treatment with bismuth with little or no effect on the lesions. After Mapharside treatment 4 of these cases (36, 46, 50 and 52) could be classified as clinically cured and 3 cases (1, 9 and 25) were markedly improved. It should be noted that 2 cases

(10 and 33) of the 4 cases which failed to respond to Mapharside injections were of fifteen and seven years duration respectively and as will be shown later, the duration of the disease appears to have considerable influence on the chances of cure.

Of the 7 cases which did not respond to treatment with gold salts, 3 patients (Cases 30, 41 and 45) were clinically cured, and a further 2 patients (Cases 4 and 24) were markedly improved after Mapharside injections . These 5 cases could be claimed as satisfactory results therefore while the remaining 2 patients (Cases 26 and 42) proved resistant to the arsenical compound.

Of the 4 patients who had previously received both gold and bismuth treatment, 1 patient (Case 7) was cured and another case (32) was markedly improved. 2 patients were completely resistant to treatment (Cases 11 and 47) and showed no change in the lesions.

Summarising therefore, it can be said that of the 22 cases which had received treatment with one or other or both of the heavy metals of gold and bismuth, 14 or almost three quarters of the cases gave a satisfactory response to Mapharside therapy.

These results suggest that Mapharside is efficacious in the treatment of Lupus Erythematosus Discoides and is worthy of trial in cases which have hitherto proved resistant to the heavy metals commonly used in the treatment of this disease.

In passing it is interesting to note that of the 8 patients who had received previous Sulphonamide therapy with no success, 5 gave a satisfactory response to Mapharside treatment. More will be said of this result in Part 11 of this Thesis.

Relapses:

In order to determine the permanent character of the results of treatment, observation of the 37 satisfactory cases was carried out at three monthly intervals. The first survey was made fifteen months after cessation of Mapharside treatment and showed 4 of the cases to have relapsed. 2 of these cases (30 and 43) had been initially classified as cured and 2 cases (32 and 54) had been markedly improved. All cases with the exception of Case 30 relapsed within eight months of completion of treatment. In Case 30 fresh patches occurred twelve months after treatment on the right cheek and chin. These patches were completely separated from the original area on the left cheek which remained perfectly sound. The writer

considers this case to have relapsed although other authorities might consider the fresh patches as a new attack of the disease. It is a matter of individual opinion.

Further observation of the 37 cases was continued at three monthly intervals for another fifteen months and a second and final survey was made two and a half years after the cessation of treatment. Only 1 patient (Case 17) classified previously as markedly improved had relapsed since the first survey but there were 3 defaulters, one of which Case 54, was recorded as having relapsed at the first survey. The remaining 2 of the 3 defaulters (Cases 13 and 21) were under observation for one and a half years and at that time could still be considered markedly improved. The single relapsed patient was very similar to Case 30 in that fresh lesions had appeared on the forehead while the original area on the nose showed no clinical activity. The fresh lesions in Case 17 appeared twenty months after cessation of treatment.

There was no observation period in the case of the failures as many of these patients were investigated and treated afresh as described in Part II of the Thesis, while the remainder were given other experimental methods of therapy irrelevant to this Thesis.

The final results are classified and compared with those described immediately after treatment in Table 2.

TABLE 2.

Immediately After Treatment.			Two Years and Six Months After Treatment.				
Cured	Marked Improv.	Satisfact. Results	Cured	Marked Improv.	Relapses	Satisfact. Results	Default.
20	17	37 (66.3%)	18	14	5	32 (57.1%)	3

NAME	ADDRESS AND AFFILIATION	DATE
Colin F. Begg	19A Eversfield Road, AYR, Ayrshire	29/1/92

From Table 2 it can be seen therefore that in the period of two years six months after treatment, 5 cases had relapsed. The writer considered that the period elapsing between the cessation of treatment and the final survey was sufficient to determine the permanency of the results.

In the writer's opinion these results show that if a relapse is to occur, it is most liable to do so within twelve months of the end of treatment. This is somewhat different to the view of Calloway and Stokes (1938) in a review of 31 cases treated with gold. They were of the opinion that relapses after apparent cure occurred without any relation to time. These writers also found a large number of their relapses associated with excessive exposure to sunlight. The writer admits the adverse effect of sunlight on lesions of Lupus Erythematosus Discoides but in the foregoing 5 relapsed cases, there was no history of exposure to excessive sunlight. In addition, other factors such as the duration and site of the disease and the age and sex of the patient had no relationship to recurrence in the writer's cases.

To summarise therefore, none of the 5 cases which relapsed showed any clinical similarity and so time alone

appears to be the determining factor as to the permanent character of the clinical cure.

Results of patients with Tuberculous connections.

Of the 14 patients who had Tuberculous connections, 4 (Cases 19, 39, 41 and 46) responded well to treatment and could be classed as clinically cured. Marked improvement was shown in other 4 patients (Cases 9, 22, 31 and 51) after Mapharside injections. 8 cases therefore, gave a satisfactory response to treatment. The remaining 6 cases could be classed as failures to treatment. This includes the one patient (Case48) who had had symptoms of active Tuberculosis in the form of an haemoptysis four years previous to treatment. The following is a typical case which has been successfully treated:-

Case 19. M.F. F 22 years.

Present Condition. 12/4/46. Typical areas of Lupus Erythematosus Discoides on each cheek and on bridge of nose. Scaling on patches thick and yellow. Borders of patches infiltrated.

Previous history. Measles and Mumps in childhood. Enlarged Tuberculous Glands in the right side of neck when at school. Approx age thirteen years. Right sided pleurisy in 1945.

Previous treatment. 5 months irregular Sulphonamide therapy in 1945.

Other investigations. X-ray chest and Sinuses revealed no abnormality.

Treatment. 0.06gm Mapharside given by weekly intravenous injections commencing on 12/4/46.

17/5/46. Examination of the patches of Lupus Erythematosus on cheeks after 300mgm Mapharside had been given, showed marked changes present. All areas showed depigmentation. There was no infiltration of the borders and scaling was almost absent.

31/5/46. After 420mgm Mapharside, the lesions showed no clinical activity and the area on the nose presented itself as a thin white scar.

20/6/46. After 600mgm Mapharside, clinical cure of all areas could be claimed. No further treatment was given at the patient's request.

Of these 8 satisfactory cases 4, (Cases 9, 19, 39 and 46) had a history of Glandular Tuberculosis, while another 2 patients (Cases 22 and 31) had only family history of Tuberculosis with no associated personal signs of symptoms. The remaining 2 cases (41 and 51) had positive X-rays of chest but as was stated previously, the lesions were healed and calcified and of old-standing.

It is the writer's opinion therefore, that although the number of cases is small, there is sufficient evidence to conclude that in these cases of Lupus Erythematosus Discoides classified by Freshwater (1912) as Toxi - tuberculous and which seem to have a definite relation to

the Tubercle bacillus or its toxin, there is a reasonable expectation of a satisfactory response to Mapharside therapy. It is interesting to note that there were no relapses in the 7 satisfactory cases.

Other results.

A satisfactory response to treatment was obtained in 5 cases (2, 16, 34, 38 and 51) of the 8 patients with sinus infection. 3 were cured and the other 2 markedly improved. It is interesting also to note that in the 3 cases (40, 55 and 49) not responding to treatment, the infection was severe and involved both antra. Throne (1925) was of the opinion that cases such as the 8 just described were particularly liable to relapse after treatment unless the focus of infection was radically removed before treatment was commenced. None of the 5 satisfactory cases had this done and not one showed any sign of relapse.

Case 44 who was in her fourth month of pregnancy at the completion of her first and only course of treatment and who gave a history of previous miscarriages, again aborted between the fifth and sixth month. Due to the careful watch kept on her condition, her previous history and the early cessation of Mapharside treatment, it is improbable that the miscarriage was the result of

Mapharside treatment.

The case which gave a history of Pernicious Anaemia (Case 14) had repeated blood examinations performed during the course of treatment. A slight drop in the red cell count was detected towards the end of the second course of Mapharside and to counteract this, Neo-hepatex was given weekly instead of at three weekly intervals. This produced a rapid return of the red cell count to normal levels. Response to Mapharside treatment was only slight.

Roxburgh and Corsi (1930) and Strandberg (1931) noted that in their series of cases treated with gold, the shorter the duration of the disease, the better was the chance of cure with treatment. Conversely Saunders (1929) and Pautrier and Levy (1928) were of the opinion that in their respective series of gold treated cases, the duration of the disease had no influence on the response to treatment. The writer is in agreement with the former opinion and Table 3 is hereby given showing results which confirm the writer's opinion that the same statement is true for cases treated with Mapharside.

TABLE 3.

RESULTS OF TREATMENT	TOTAL	NUMBER OF CASES			
		UNDER 1 YEAR DURATION	UNDER 2 YEARS DURATION	UNDER 5 YEARS DURATION	OVER 5 YEARS DURATION
CURED	20	3	11	5	1
MARKEDLY IMPROVED.	17	3	5	6	3

The amount of Mapharside required to affect a clinical cure varied considerably and in 9 cases (5, 12, 16, 19, 34, 36, 38, 43 and 56) of the 20 patients cured, injections were stopped at the patients' request before full courses of the treatment were given. Unlike Syphilis, there are no blood tests in Lupus Erythematosus which can be taken as a guide to further treatment once the surface lesions have healed. In the remaining 11 patients, although cure was apparent before full courses of Mapharside had been administered, injections were continued until the two complete courses of the drug had been given. The following is a typical case history:-

Case 45. R.S. M. 42 years.

Present condition	Typical patches of Lupus Erythematosus Discoides on nose and forehead. Lesions were very erythematous, slightly infiltrated and covered with adherent silver scales. Duration - four years.
Previous treatment	20 injections Myocrisin 1943. Treatment commenced with weekly intravenous injections of 0.06gm Mapharside.
9/9/46.	First course of injections completed. 600mgm Mapharside administered. Lesions are now showing no activity. Scaling is completely absent from both areas. Fine scarring is present on nose.
7/10/46.	Second course of Mapharside commenced.

Areas show no clinical activity.

4/11/46. Patient has now received a total of 840mgm Mapharside and on examination, the lesions on the nose and forehead could be classed as clinically cured. Only the slightest trace of the lesions could be detected on the forehead and that on the nose was replaced by thin but sound scar tissue.

15/12/46. Second course of Mapharside completed. No further change in the lesions was seen.

It was thought that an observation period of at least two years was necessary to decide whether the continuation of injections after clinical cure would in fact prevent a recurrence of the disease. Accordingly at the final survey after the cessation of treatment, it was noted that of the 2 cases which had relapsed after apparent cure, 1 was included in the 11 who had completed both courses of Mapharside, while the other case was included in the 9 cases who had stopped treatment when clinical cure was noted.

It is the writer's opinion therefore, that the continuing of injections after apparent cure, is of doubtful value in the prevention of recurrence. Rutledge (1931) and Wright (1936) on the other hand, believed that treatment should be continued for a few weeks after apparent cure in order to lessen the risk of recurrence. From the results

therefore, the conclusion can be drawn that the amount of Mapharside required for permanent cure must be determined on the basis of the individual case. For example Cases 5, 15 and 16 who required 720mgm, 1200mgm and 360mgm Mapharside respectively for clinical cure.

From this fact it would appear that the raising of the dosage from 0.04gm Mapharside to 0.06gm Mapharside at weekly intervals is of little benefit except perhaps that it may speed up the response to treatment.

The limit of Mapharside injected however, was fixed at 1200mgm as it was decided that this was sufficient to produce an average response to treatment.

Chapter IX.

COMPLICATIONS AND REACTIONS.

The complications and reactions which may follow the administration of the organic arsenicals are many. They may be classed as local or general and can occur early or late in the course of treatment. While some reactions are harmless, others are serious and in some cases fatal. The causes of reaction can be sought in the drug itself, in the technique of administration and in the patient.

Local reactions are less common and less severe and are invariably due to faulty technique in administration. Extravenous injection of Mapharside causes an intense local inflammatory reaction which may proceed to necrosis and sloughing of tissues. Another local complication is the onset of venous thrombosis. According to Moore (1944), the latter complication is exceptionally rare with Mapharside.

General reactions are much more frequent and of greater importance and danger. They may be divided into immediate and late types. In the immediate type, reactions occur during, immediately after, or within twenty four hours of injection of the drug. They include headache, nausea and vomiting and occasionally an urticarial rash.

More serious to the patient are Nitritoid crises, Jarisch-Herxheimer reactions and the much less common Ventricular fibrillation.

The late reactions include Milian's Erythema of the Ninth Day, Albuminuria and Nephritis, Jaundice and Dermatitis. This last complication may be slight and limited to the extremities of the body or it may be extensive and very occasionally proceed to an exfoliative dermatitis with a fatal issue. Jaundice may be the forerunner of an acute liver atrophy and other serious and often fatal complications may be aplastic anaemia or granulocytopenia.

No further detailed description of the many complications and reactions need be given as they have been fully described many times by numerous authorities. Mapharside has been proved by Moore (1944) to be one of the least toxic of the trivalent organic arsenicals, and in this series of cases, there were no local reactions and general complications were few in number.

In only 3 patients (Cases 3, 28 and 53) of the 56 patients, was treatment suspended because of a reaction. A fourth patient produced a mild reaction which did not necessitate such a measure. The first patient (Case 3) who was in a poor state of health, developed a mild albuminuria after 320mgm Mapharside had been administered.

Treatment was suspended for four weeks by which time all the albumin had disappeared from the urine. On resumption however, two weekly injections of 0.02gm and 0.03gm respectively caused a reappearance of the albumin and the urine on microscopic examination showed casts and a few red blood corpuscles. Treatment with Mapharside was again discontinued and after a few weeks of observation, the urine had cleared completely. No further arsenic was administered. Eighteen months later urinary examination showed no abnormalities.

The second patient, Case 28, complained of itching on the dorsum of hands and wrists after 240mgm Mapharside had been administered. A papulo-vesicular dermatitis developed rapidly on these areas. Arsenical treatment was immediately suspended and the condition treated with simple zinc cream. In the course of a few weeks the dermatitis cleared completely.

The third patient, Case 53, also developed an arsenical dermatitis. This occurred after 480mgm Mapharside and appeared on the feet, legs, thighs and lower abdonem without any prodromal itching. It was associated with slight pyrexia but no other signs of visceral involvement were present and the urine remained

perfectly normal. The rash was papular in type and intensely itchy. The condition was treated with 1% Acid Salicyl. in Zinc cream and Mapharside treatment was immediately suspended. 300mgm of Vitamin C were given daily by mouth. The dermatitis cleared rapidly at first but many weeks passed before all traces of the eruption had disappeared. A patch test with a solution of Mapharside (0.04gm in 100c.c.s water) was done twelve months after the disappearance of the rash and a localised patch of typical papular dermatitis was produced.

As both the above cases of dermatitis were due to Mapharside sensitisation, no further treatment was given, as it has been shown by Robinson (1931) that a dose of approximately 0.005mgm of Arsphenamine can produce a generalised rash for as long as six years after the start of an original dermatitis. Other trivalent preparations were also avoided as Frei and Mayer (1927) have proved that the sensitisation is usually group specific i.e. it extends to all members of the trivalent arsenical group.

The fourth patient Case 13 was the only one who experienced much nausea and sickness after Mapharside injections. In this case symptoms were severe enough

to necessitate a reduction in the weekly dosage from 0.06gm to 0.04gm Mapharside. This relieved these symptoms completely.

Anwyl-Davies (1943) states that the incidence of Dermatitis due to injections of Mapharside is as low as 1.22% in relation to a series of patients treated for Syphilis. The writer suggests that the higher incidence of this complication in the present series of Lupus Erythematosus Discoides may be due to the increased sensitivity of the skin which is thought to be present in the disease, thus rendering the patients more liable to Dermatitis as a complication of arsenical treatment.

The percentage of reactions to Mapharside is, however, low enough to be in favour of rather than against the use of the arsenical preparation in the treatment of Lupus Erythematosus Discoides.

Summary.

1. 37 cases of Lupus Erythematosus Discoides from a total of 56 showed a satisfactory response to treatment with Mapharside.

2. An observation period of two years six months resulted in 5 relapses and 3 defaulters in the original 37 satisfactory cases.

3. Of 22 cases which had received treatment with gold and/or bismuth, 14, or almost threequarters of these cases, gave a satisfactory response to Mapharside therapy.

4. 14 of the 56 cases had definite Tuberculous connections. 8 of these gave satisfactory results with Mapharside treatment. There were no subsequent relapses.

5. 5 of 8 cases with evidence of chronic Sinusitis, gave a satisfactory response to treatment, with no relapses.

6. Of the 20 cases clinically cured, 14 were of two years duration or less and 5 were under five years duration. The remaining case was of six and a half years duration.

7. Complications were seen in only 4 cases. 3 of these cases required complete cessation of treatment.

Chapter X.

TREATMENT WITH GOLD.

Gold salts were first used in the treatment of disease in 1810 when, according to White (1894), Christian employed them in Pulmonary Tuberculosis. Since then, gold has been used in many forms of Tuberculosis, including Lupus Vulgaris.

Martenstein (1922) using a compound known as Krysolgan, in a series of 42 cases, introduced gold into Europe as a method of therapy in Lupus Erythematosus Discoides. This compound, which had been prepared in 1917 by Feldt, is sodium amino auro mercaptobenzol carbonate and has a gold content of approximately 44%. The results of Martenstein were variable, in some cases brilliant, in others, only moderate. In his series he claimed a curative result in 66.5% of cases.

Semon (1927) introduced gold treatment of Lupus Erythematosus Discoides into this country and used Krysolgan in a small series of 9 cases. In the same year, Schamberg & Wright (1927) in America, treated 25 cases of the disease with Sanocrysin. This compound had been prepared by Møllgard in 1924 and was the double

thiosulphate of gold and sodium with a gold content of approximately 37.4% and had been used previously in Europe by Galewsky (1926) in 1924 and 1926.

Since that time, numerous gold compounds have been manufactured under names such as Triphal, Aurophos, Solganol, Lopion and Myocrisin. All of these have been used at one time or another in Lupus Erythematosus Discoides with varying success. Galewsky (1926) was of the opinion that Aurophos was the most beneficial and least toxic of the gold preparations. Throne (1927) on the other hand advocated the use of Triphal, as animal experiment had shown it to be the least toxic of the then manufactured gold compounds. Towle (1931) however in a critical review of 480 cases of the disease treated in different parts of the world with the numerous gold compounds, was of the opinion that the best results were obtained with the Double Thiosulphate of Gold and Sodium. This was also the opinion of Wright (1936) a few years later. Greenbaum (1933) advised the use of different compounds in the same case of the disease. Since then, this idea has found considerable support among other authorities.

The exact way in which gold produces its

beneficial effects in Lupus Erythematosus Discoides still remains unknown. Tolman (1938) states that the therapeutic effect of the drug is not specific for Lupus Erythematosus and "is due to its ability to act on the skin directly or on one of the factors involved in the aetiological complex". Some observers believe its effect is due to direct bactericidal action on the causative organisms and other authorities believe that it causes an inflammatory reaction in the lesions with the production of a fibrosis and subsequent healing. Wigley (1932) was of the opinion that after the intravenous use of Gold Chloride, the diseased skin did not contain any demonstrable quantity of gold but Beinhaur (1944) using spectroscopic methods, found considerable traces of gold in healed scars. He also found that the skin of lesions which had not benefited by treatment contained no traces of this heavy metal. This discovery appears to indicate that gold has a definite local action on the diseased tissue and is in favour of the theory of the production of fibrosis.

Cases may be treated as in-patients or out-patients. They usually receive treatment at weekly intervals although Throne (1927) gave as many as three

intravenous injections of Triphal in one week. As there is a definite risk of reactions, due to cumulation of the metal, treatment is given in courses of ten to twelve injections with intervening rest periods of four to six weeks. Therapy usually commences with small doses of the selected compound and these doses are gradually increased if reactions, due to intolerance of the drug are absent. The actual initial dose varies greatly with the gold preparations used and so no standard figures can be given. The preparation is usually given by the intravenous route, although a few such as Myocrisin, have been prepared for intramuscular injection.

Since the time of Martenstein & Semon & Wright, many authorities have recorded their results of gold treatment in Lupus Erythematosus Discoïdes. In order to draw a comparison between the findings of the various authorities using gold and the writer's own figures with Mapharside, relevent details from these reports shall now be quoted.

In America, Schamberg & Wright (1927) first reported a series of 25 cases of the disease treated with gold. In this series, they claimed 5 (20%) cases as cured and 18 (72%) cases as markedly improved. No

observation period of the cases was carried out and so details of relapses in the cases were not given. Wright (1936) however in an investigation of ten year's experience with gold therapy in Lupus Erythematosus Discoides, fully discussed a larger series of 76 cases. His immediate results in these were 28 (37%) cases clinically cured and 26 (34%) markedly improved, the remaining 29% of cases being classed as failures. During the ten year period however, no less than 13 of his 54 successfully treated cases relapsed and so his final satisfactory figure was 41 cases.

Whitehouse & Becket (1927) treated 30 cases of the condition with gold. Of this number only 4 were reported clinically cured and 4 as markedly improved. No subsequent follow up of the cases was reported.

In the same year, Throne, Clark and Van Dyck (1927) reported a series of 25 cases of the disease treated entirely with Triphal. In this series, the figures were very different from those of Whitehouse & Becket as 17 cases were claimed as clinically cured and 5 cases as markedly improved. A satisfactory response was thus claimed in 88% of cases which is an exceptionally high curative rate.

Saunders (1929) using the Double Thiosulphate of Gold and Sodium, treated 32 cases of Lupus Erythematosus Discoides. He reported 15 (46.8%) cases as cured and 4 (12.5%) cases as markedly improved. No indication was given as to the number of relapses which may have occurred in these 19 sucessfully treated cases as no follow up of these was done.

Rutledge (1931) published a series of 56 cases treated with Sanocrysin, Krysolgan and Solganol. In this, he reported 18 cases as cured but only 9 cases as markedly improved. Of the remaining 29 cases, 21 were slightly improved and 8 showed no benefit from treatment. After a two year observation period, 5 of the 27 satisfactory cases had relapsed and so the final satisfactory response to treatment was 22 cases.

He found that there was little to chose between the various preparations but thought that Sanocrysin was the most beneficial although the most toxic of the gold compounds.

Finally in America, Tolman (1938) in 68 cases exclusively treated with Sanocrysin, described 31 cases as clinically cured and 11 cases as markedly improved. The remaining 26 cases he classed as failures. Observation

of his 42 successfully treated cases showed a subsequent relapse in no less than 14 of these. His final satisfactory figure was lowered therefore to 28 cases.

In this country, Semon (1927) described a small series of 9 cases in which 2 cases were cured and 5 greatly improved. Later Roxburgh and Corsi (1930) in a series of 35 patients treated with both Krysolgan and Sanocrysin, reported 8 cases as cured and 6 cases as markedly improved. They found little to choose between the drugs although Sanocrysin appeared to be slightly more effective. In a subsequent follow up, 2 of their 14 satisfactory cases relapsed. Franklin (1934) treated 31 cases with Sanocrysin and had the high curative rate of 19 cases but only 4 cases were greatly improved. In the same year and using the same compound, Smith (1934) in a small series of 12 cases reported 5 as cured and 3 as markedly improved.

As stated previously, Martenstein (1922) introduced gold in the treatment of Lupus Erythematosus Discoides into Europe, in a series of 42 cases. Of that number 28 were regarded as clinically cured, 4 greatly improved, 4 showed no change and 4 were made worse by gold therapy. No subsequent follow-up was carried out on the sucessfully treated cases.

Schreiner (1926) reported a series of 46 cases of the disease treated with Krysolgan. Of this number 6 were of the acute disseminated type of Lupus Erythematosus. Of the 40 chronic discoid cases, 15 were clinically cured and 10 markedly improved. 15 were classed as failures to treatment. Only a short observation period of a few months was allowed and in this time, only one of the satisfactory cases showing marked improvement, relapsed.

Another German writer Galewsky (1926) treated 24 cases of the condition with gold compounds. In 9 of these cases he used Krysolgan, in 8 he used Triphal and in 4, Aurophos. In 3 cases only did he use all of the gold preparations. He reported 10 cases as clinically cured and 8 cases as greatly improved, thus giving a satisfactory response of 18 cases. He was of the opinion that Aurophos was the least toxic and yet the most beneficial of the gold compounds used.

Two Frenchmen, Pautrier & Levy (1928) reported 15 cases treated with Sanocrysin and Crisalbine. Of this number, 6 cases were regarded as clinically cured and 2 cases markedly improved. 1 case was not included in the series as in addition to receiving gold injections, local treatment had been repeatedly performed

with Carbon Dioxide snow. In a subsequent follow-up, 2 of the 8 satisfactory cases relapsed.

An Italian Rivelloni (1929) treated 16 cases of the disease with various gold compounds. He reported 6 cases as cured and 3 as markedly improved.

Lastly Strandberg (1931) in Denmark reported a large series of 84 cases treated over a six year period. In this series he used Krysolgan, Triphal, Solganol and Aurophos. 35 of his patients could be regarded as clinically cured and 23 as very greatly improved immediately after treatment. He was of the opinion that all types of gold preparations should be tried if resistance to a specific one was found and considered also that no type of treatment with gold was specific against the recurrence of the disease, as in no less than 11 of his 58 satisfactory cases did this occur. An observation of Strandberg which has received considerable support was that in exceptionally resistant cases, local treatment should be combined with gold therapy.

No cases were treated with gold by the writer, but instead, the records of 132 cases of Lupus Erythematosus Discoides treated with the various gold compounds at the Royal Infirmary, Glasgow, during the twelve year period from 1927 - 1938 inclusive, were studied.

Aurophos and Lopion were the two main products used, although in a few cases, treatment was given with Sanocrysin and Myocrisin.

Only cases treated and subsequently followed for three years were made use of, and on examining the records of the 132 cases, it was found that only 61 were suitable for use in a comparative table. The results of these cases are tabulated in Table 4. The larger group of 71 cases was useless because of insufficient treatment due to defaulting or an insufficient observation period.

TABLE 4.

No.	Name	Sex	Age	Distribution	Duration	Treatment	Quantity	Result	Remarks
1	D.M	F	39	Generalised Face	10yrs	Triphal Aurophos	0·6g 1·2g	Slightly Improved	
2	Mrs M.L	F	46	Nose and Scalp	3yrs	Aurophos	1·25g	Cured	Relapsed in 18mths
5	Mrs M.G	F	35	Forehead	2yrs	Aurophos	1·11g	Cured	
6	C.C.	F	46	Nose and ears	2yrs	Aurophos	0·46g	Cured	Multiple relapses after 5yrs
7	Mrs S	F	60	Nose and cheeks	10yrs	Aurophos	0·41g	No Change	
8	K.L	F	26	Scalp	2yrs	Aurophos	0·33g	Slightly Improved	
9	E.M	F	35	Cheeks	1yr	Aurophos	0·62g	No Change	
11	Ms B	F	34	Nose	2yrs	Aurophos	1·25g	Slightly Improved	
12	R.B.	M	20	Nose, cheeks and ears	10yrs	Aurophos	2·01g	Markedly Improved	
14	Ms H	F	42	Nose and cheeks	10yrs	Aurophos	1·87g	Cured	Relapsed after 2yrs.
15	Ms C	F	36	Nose and cheeks	2yrs	Aurophos Kepion	1·46g 0·5g	Cured	Recurrence on cheeks 4mths
16	E.P.	F	34	Cheeks	6mths	Aurophos kepion Sanocrysin	0·13g 0·55g 5·5g	Cured	
17	Ms S	F	36	Cheeks	4yrs	Aurophos	0·53g	Cured	Relapsed in 6mths
20	M.F	F	28	Nose and cheeks	1yr	Aurophos	2·02g	Slightly Improved	Relapsed in 5mths
22	Mrs S	F	45	Cheeks	2yrs	Aurophos	1·75g	Cured	
23	C.F.	F	28	Nose and cheeks	3yrs	Aurophos	1·17g	Cured	Relapsed cheeks in 8mths
24	M.S.	M	36	Nose cheeks and ears	3yrs	Aurophos	0·27g	No Change	Severe Exfoliative Dermatitis
25	Mrs S	F	46	Cheeks	7yrs	Aurophos	1·85g	Slightly Improved	
27	A.E	M	25	Left Cheek	1yr	Aurophos	0·78g	Cured	
33	A.T.	F	24	Nose and Cheeks	7yrs	Aurophos	1·48g	Markedly Improved	
36	P.S.	M	31	Right Cheek	3yrs	Aurophos	0·97g	No Change	
37	Ms F	F	44	Nose and Cheeks	1yr	Aurophos	1·68g	Markedly Improved	
39	J.S.	F	40	Cheeks	4yrs	Aurophos	0·38g	Slightly Improved	Developed severe Nephritis.

TABLE 4 (Cont.)

No	Name	Sex	Age	Distribution	Duration	Treatment	Quantity	Result	Remarks
40	A.C.	F	21	Right Temple	1yr	Curephos	0·58g	Markedly Improved	Developed Generalised Dermatitis
41	M.W.	F	52	Left Temple	3yrs	Curephos	1·18g	Cured	
44	H.R.	F	29	Hands	2yrs	Kopion	0·78g	Cured	Relapsed in 5mths
47	M.R.	F	20	Cheeks and Hands	1yr	Kopion	1·13g	Markedly Improved	Relapsed cheeks 2yrs
54	Mrs MG	F	50	Temples and ears	4yrs	Kopion	0·21g	Cured	Severe Urticaria Relapsed 2½yrs
55	M.B.	F	35	Nose and Cheeks	2yrs	Kopion Sanocrysin	0·47g 0·3g	Cured	
56	Mrs T.	F	29	Nose	2yrs	Kopion	1·47g	No Change	
60	J.W.	F	18	Face and knee	6mths	Kopion	0·42g	Cured	Face relapsed 2mths
62	J.H.	F	31	Face and ears	6mths	Kopion	1·0g	Cured	
64	C.B.	M	40	Right Cheek	4yrs	Kopion Sanocrysin	0·42g 1·7g	No Change	Severe Gastro-intestinal upset.
67	Mrs K	F	44	Nose and Ears	2yrs	Kopion	0·35g	No Change	Severe Gastro-intestinal upset.
75	Mrs H	F	37	Face generalised	12yrs	Kopion	0·31g	No Change	
77	A.M'N	M	35	Cheeks	2yrs	Kopion	0·69g	Cured	
78	M'MG	F	39	Cheeks and Scalp	2yrs	Kopion	0·72g	Slightly Improved	
79	A.G.	F	23	Nose	6mths	Kopion	0·67g	Cured	Relapse on cheeks - 6mths
84	Mrs M	F	27	Cheeks and Nose	9mths	Kopion	0·82g	Markedly Improved	Relapse in 12mths
86	C.K.	F	26	Nose	6mths	Kopion	0·37g	No Change	Syncope after each injection.
87	J.E	F	46	Nose and Ears	1yr	Kopion	0·72g	Slightly Improved	Generalised Vesicular Dermatitis
91	A.B.	F	42	Nose	3yrs	Kopion	0·52g	Markedly Improved	Relapse on cheeks 5mths
94	J.B	M	34	Nose and Cheeks	1yr	Kopion	1·62g	No Change	
95	E.R.	F	21	Cheeks	6mths	Kopion	0·62g	Cured	Relapsed after 5mths
96	Mrs S	F	52	Nose and Cheeks	3yrs	Kopion	0·35g	Slightly Improved	Exfoliative Dermatitis → Death
97	Mrs D	F	36	Cheeks and Ears	3mths	Kopion	0·45g	Markedly Improved	

TABLE 4 (Cont.)

No	Name	Sex	Age	Distribution	Duration	Treatment	Quantity	Result	Remarks
98	E.R	F	12	Nose and Ears	2yrs	Lopion	1·35g	Slightly Improved	
100	M.H	F	23	Nose and Cheeks	18mths	Lopion	0·32g	No Change	
102	W.H	M	37	Cheeks and Temples	2½yrs	Lopion	1·97g	Markedly Improved	
111	S.W	M	31	Face generalised	7yrs	Lopion Sahacrysin	0·47g 1·00g	Cured	
112	J.M	M	37	Cheeks and Neck	4yrs	Lopion	0·27g	No Change	Developed popular Dermatitis
114	Mrs Mc	F	46	Nose and Forehead	9yrs	Lopion	0·01g	No Change	Developed severe Nephritis
121	E.M	F	29	Nose	16mths	Lopion	0·57g	Markedly Improved	
123	T.F	M	32	Face - generalised	6yrs	Lopion	1·52g	Slightly Improved	
125	Mrs B	F	52	Nose and Scalp	18mths	Lopion	0·38g	Cured	
127	Mrs R	F	36	Cheeks	1yr	Lopion	0·37g	Markedly Improved	Developed Generalised Erythema
129	C.N.	F	38	Scalp and fingers	10yrs	Lopion	0·72g	No Change	Developed generalised Dermatitis
134	Mrs R	F	38	Left Cheek	1yr	Lopion	0·45g	Slightly Improved	
137	C.R.	F	34	Nose	3yrs	Lopion	0·85g	Markedly Improved	Relapsed after 5mths
139	Mrs R	F	32	Nose and Cheeks	6yrs	Lopion Myocrisin	1·28g 0·74g	No Change	
141	Mrs L	F	41	Cheeks	2yrs	Lopion	0·42g	Markedly Improved	

From this Table it can be seen that of the 61 cases, 21 (34.4%) cases were classed as clinically cured, 13 (21.3%) as markedly improved, 12 (19.7%) as slightly improved and 15 (24.6%) cases as showing no change in the clinical condition. A satisfactory result was thus obtained in 34 (55.7%) of the total cases. Of these 34 cases, no less than 16 showed recurrence of the lesions after cessation of treatment. Of these 16 cases, 10 patients relapsed within twelve months of the end of treatment with gold and 4 cases within the next year i.e. 14 of the 16 cases relapsed within two years of cessation of gold therapy.

Earlier gold preparations were exceedingly toxic and although great skill has been employed in developing less toxic compounds, reactions and complications are still very common. According to Diver and Weller (1931), the various types of reactions to gold may be divided into:-

1. Immediate reactions including anaphylactic reaction, febrile reactions and a metallic taste in the mouth.
2. Delayed toxic reactions which usually occur after the second, third or subsequent injections and include stomatitis, gingivitis, albuminuria and hepatitis.
3. Reactions involving the skin and 4. Death. This classification may be accepted as including all the various

types of reactions embraced in the literature on treatment with gold preparations. Most writers regard these toxic reactions as a danger to be guarded against although Smith (1934) was of the opinion that in Lupus Erythematosus Discoides, a mild toxic reaction often preceeded an excellent result to treatment. Rutledge (1931) however disagrees with this and was of the opinion that a reaction after gold injections was more marked in those cases not responding favourably to treatment.

In the above series of investigations, the number of toxic reactions in each series varied greatly. Wright (1936) observed that the most common toxic manifestation was a Scarletiniform Dermatitis. This occurred in no less than 8 of the 19 cases in his series which showed reactions to gold preparations. Cutaneous reactions were also very common in the series reported by Saunders, Rutledge and Strandberg, the latter finding them in 17 of his 21 cases showing toxic effects. In the series from the Royal Infirmary, Glasgow, toxic manifestations occurred in 13 cases. 8 of these reactions were cutaneous and one was an exfoliative dermatitis of such severity that the patient died.

Throne et al (1927) were of the opinion that pruritis was the earliest sign of a reaction to gold and

also added that the number of reactions could be considerably decreased by first examining the patient for any evidence of focal infection and its radical removal. This was not the opinion of other authorities.

Rivelloni (1929) and Paitrier and Levy (1928), found gastro-intestinal irritation and albuminuria very common complications.

In Table 5, these reactions to the gold compounds together with the results of treatment, are summarised and compared with those of Mapharside.

TABLE 5.

Authority.	Compound Used	Cases	Results of Treatment: Cured	Markedly Improved	Satisfactory Results	Relapses (% of Satis. Results)	Reactions
Schamberg and Wright	Sanocrysin	25	5	18	23 (92%)		7
Wright	Sanocrysin	76	28	26	54 (71%)	13 (24%)	19
Throne et al	Triphal	25	17	5	22 (88%)		5
Saunders	Sanocrysin	32	15	4	19 (59·3%)		12
Whitehouse and Becket	Sanocrysin	30	4	4	8 (26·6%)		4
Rutledge	Solganol Sanocrysin Krysolgan	56	18	9	27 (48·1%)	5 (18·5%)	8
Tolman	Sanocrysin	68	31	11	42 (67·1%)	14 (33·3%)	17
Semon	Krysolgan	9	2	5	7 (75%)		2
Roxburgh and Corsi	Sanocrysin Krysolgan	35	8	6	14 (39·9%)	2 (14·3%)	4
Franklin	Sanocrysin	31	19	4	23 (77·3%)		9
Smith	Sanocrysin	12	5	3	8 (66%)		4
Martenstein	Krysolgan	42	28	6	34 (81%)		No Data Given
Schreiner	Krysolgan	40	15	10	25 (62·5%)	1 (4%)	5.
Galewsky	Krysolgan Triphal	24	10	8	18 (74·9%)		2
Pautrier and Levy	Sanocrysin Crisalbine	15	7	2	9 (59·9%)	2 (22·2%)	3
Rivelloni	Triphal Aurophos	16	6	3	9 (56·3%)		4
Strandberg	Krysolgan Solganol Triphal	84	35	23	58 (64%)	11 (18·9%)	21
Royal Infirmary	Aurophos Sopien Sanocrysin	61	21	13	34 (55·7%)	16 (44%)	13
TOTAL OF ABOVE		681	274 (40·2%)	160 (23·4%)	434 (63·6%)	64 (23·1%)	139 (22%)
MAPHARSIDE RESULTS		56	20 (35·8%)	17 (30·4%)	37 (66·2%)	5 (14%)	4 (7·1%)

Chapter XI.

COMPARISON OF GOLD AND MAPHARSIDE.

On inspection of the fourth column of Table 5 it will be seen that the honours in the treatment of Lupus Erythematosus Discoides definitely go to gold. It shows an average curative rate of 40.2% against 35.8% with Mapharside. It should be noted however that in the series of gold treated cases at the Royal Infirmary, Glasgow, almost numerically similar, and treated under the same environmental and seasonal conditions as the Mapharside series, the records show a decrease of 1.4% from the results in the writer's series of cases.

On examining the fifth column of figures in Table 5 also, the position is reversed and treatment with Mapharside shows a marked improvement in 30.4% of cases compared with 23.4% with gold. The final satisfactory figures are thus 63.6% with gold treatment and 66.2% with Mapharside therapy giving a lead of 2.6% therefore to Mapharside.

This superior performance does not lead the writer to suggest that gold therapy should be abandoned in favour of Mapharside, but it does demonstrate that arsenic should have a place in the list of metals used in the treatment

of Lupus Erythematosus Discoides. A further study of Table 5 and the numerous results and findings of the various authors and of the writer, endorse this statement.

It can be seen from Table 5 that in only eight series of cases were figures of relapse subsequent to cessation of treatment given, and of these, only one, Schreiner, showed a percentage of relapses lower than those in the present series with Mapharside. It can also be seen from Table 5 that of a total of 273 satisfactory cases, 64 (23.1%) cases relapsed. This percentage is not so high as that of 77% quoted by Callaway and Stokes (1938) in a series of 61 successfully treated cases, but it is a much higher percentage than that quoted by the writer in this Mapharside series (14%), and would appear to be another indication for the use of Mapharside in the treatment of Lupus Erythematosus Discoides.

The writer stated previously that contrary to the findings of other authorities, relapse was most liable to occur in the first year after treatment. The records of gold treated cases in the Royal Infirmary, Glasgow, appear to substantiate this statement. Of the 16 relapsed cases in this gold series, 10 had recurrence of the lesions with the first twelve months after cessation of treatment.

In the last column of Table 5, a summary is given of the number of toxic effects from gold therapy which occurred in each series. It was found that these reactions developed in no less than 139 (22%) of all 681 cases. This compares very unfavourably with the low toxic rate of 7.1% in the Mapharside series. As previously stated a mild reaction to gold was thought to be beneficial in the treatment of the disease. The writer however agrees with Rutledge that the toxicity of gold is one of the definite contraindications to its use, as this toxicity cannot be confined by any means to a mild reaction. In one case of the Royal Infirmary series, a fatal issue ensued from an exfoliative dermatitis which started as a mild papulo-vesicular gold sensitisation dermatitis. This low toxic rate would thus seem to favour the use of the arsenical compound as a method of treatment.

It must be admitted that the effect of gold therapy in Mapharside resistant cases was not attempted in this series, and so a complete comparison cannot be made but nevertheless the success of Mapharside in gold resistant cases, as described previously advances the claim of Mapharside as a metal of considerable importance. In the 11 cases which had proved resistant to gold, no less than

7 of them gave a satisfactory result to Mapharside therapy.

No comparative figures are available for the results of treatment by the two methods in cases with Tuberculous connections. Only 1 patient (Case 41) who was resistant to gold but responded to Mapharside therapy had any Tuberculous connection and from this single case, absolutely no conclusion can be drawn.

A minor point in favour of Mapharside is the fact that the individual injections are slightly less expensive than those of gold.

With both therapeutic methods, clinical cure appears to be unrelated to the amount of the drug administered. As with Mapharside, cure with gold does seem to be influenced by the duration of the disease. With both arsenic and gold, the percentage of satisfactory responses is much higher in cases giving a history of five years duration or under. Saunders (1929) however, in his series treated with Sanocrysin found that the duration of the disease had little or no bearing on his results. With either method of treatment, the site and the exact mode of action of the drug remains unknown.

To conclude, although numerically Mapharside appears to be slightly inferior to gold in producing an actual clinical cure in Lupus Erythematosus Discoides, the difference

is not sufficient to exclude the arsenical compound as a method of treatment and is more than compensated for in the final increase in the number of satisfactory responses. In addition, Mapharside therapy enjoys many advantages as shown previously, and these enhance its efficiency and in the writer's opinion make its therapeutic value in the treatment of Lupus Erythematosus Discoides considerably greater than that of gold.

Chapter XII.

TREATMENT WITH BISMUTH.

Bismuth was first introduced into the treatment of Syphilis by Sazerac and Levaditi (1921). It was not until Hudelo and Rabut (1926) and Lortat-Jacob and Legrain (1927) however reported cures of Lupus Erythematosus Discoides in syphilitic patients treated with bismuth, that the drug was considered as a method of therapy for cases suffering from Lupus Erythematosus. These writers were of the opinion that the cure of the Lupus Erythematosus could be attributed to the antisyphilitic power of the bismuth.

Sezary (1928) reported remarkable results however, after bismuth treatment in 6 cases of Lupus Erythematosus Discoides who showed no signs of Syphilis and in all of whom the Wasserman test was negative. He thus advanced the theory that the heavy metal did not act in the capacity of a Treponemicidal agent but that it produced its effect by provoking a change in the general biological condition of the causal organism which subsequently favours a cure.

Three other French writers, Nicolas, Lacassagne, and Rousset (1929) published the first detailed account of a series of 17 cases of Lupus Erythematosus Discoides

treated with bismuth.

Although Lortat-Jacob (1927) reported that "sometimes there is a transitory amelioration, but the majority of cases remain indifferent to anti-syphilitic treatment", Nicolas and his co-workers estimated that "the value of bismuth in Lupus Erythematosus is greater than has yet been suggested", and in their series of 17 cases treated largely with Hydroxide of Bismuth, 10 were apparently cured and the remainder, markedly improved.

In this country, McKenna (1930) using various bismuth preparations in a series of 14 cases of the disease, supported the conclusions of Nicolas and his confreres. Although claiming only 4 cures with this heavy metal therapy, he reported a very definite improvement in no less than 9 of the remaining 10 cases.

Since the time of Nicolas et al, numerous bismuth compounds such as Thiobismol, Bismostab, Bicreol and Bisoxyl etc. have been prepared and tried in this disease. These various preparations may be divided into two forms (a) Soluble and (b) Insoluble. (a) When the bismuth is dissolved in water or oil for administration and (b) when it is injected as the metal in fine suspension or

in the colloid state. These differences in solubility do not determine the route of administration since all are given by intramuscular injection. They do however effect the rate of absorption and excretion of the bismuth.

The soluble preparations are more rapidly absorbed and excreted than the insoluble forms but their rate of absorption is not so uniform as that of the insoluble forms and consequently not so easily controlled. Also toxic effects are probably less with insoluble than with soluble varieties. Contrary to theoretical suggestion, there appears to be little risk clinically of storage of dangerous amounts of bismuth in the body due to slow absorption and excretion of the insoluble forms of the metal. In addition, the insoluble preparations are mostly inexpensive, painless and require administration only once weekly. From the foregoing, it can be seen therefore, that insoluble bismuth injections are most suitable for routine use.

The dosage varies with the preparation but an average dose calculated in terms of Bismuth Metal varies from 0.2gm to 0.4gm.

The patients are usually treated as outpatients and receive the bismuth therapy in courses of ten to twelve weekly injections with a rest interval of four to

six weeks between the courses to lessen the risk of toxic effects, due to cumulation of the metal.

The mode of action of bismuth in Lupus Erythematosus is still hypothetical. McKenna (1930) was of the opinion that its action was due to some property of the metal which prevented the tissues from reacting normally to the toxins or the bacteria which may cause the disease. He considered that its action could not be that of a detoxicant in the large bowel, as on oral administration, no therapeutic effect of the drug was noted. Some authorities consider that the metal might act by destroying a Tuberculous or other infective focus within the body, others that it might produce a bactericidal effect within the dermis itself. At present, these are only suggestions, although Eagle (1938) has shown the drug to be Treponemicidal in vitro in dilution closely approximating the concentration of the drug in the body fluids, and so the writer suggests that it is just possible that the metal might act as a bactericidal agent and destroy any causal organism or agent within the body fluids themselves.

Bismuth like gold may exhibit toxic effects. These however occur much less frequently than those of gold. The incidence and severity of the complications of bismuth therapy depend on the frequency of injection, the size of the dose,

and the mode of administration for which reason the intravenous route of injection is barred. The reactions may be local or general. The former are usually the result of faulty technique in injection. The latter may be mild and take the form of bluish pigmentation of the gum margin, due to the deposit of insoluble Bismuth Sulphide. Some authorities, regard this as a sign of adequate dosage and ignore it unless when associated with other symptoms of toxicity. On the other hand, more severe general toxic effects such as nephritis might be encountered. Poisoning due to cumulative effect of the metal is a very uncommon occurrence if the drug is administered in controlled courses, and death from the drug is extremely rare and is usually due to accidental intravenous injection of the preparation.

In order to compare the results of Mapharside therapy in the treatment of Lupus Erythematosus Discoides with the findings of various writers who have treated the disease with bismuth or its salts, the latter shall be examined and the relevant facts reported as has been done with gold.

As stated above, Sezary (1927) reported 6 cases of the disease treated with bismuth. Of this number, 5 cases were clinically cured and 1 showed no change in the lesions.

one of his satisfactory cases subsequently relapsed within a few months of cessation of treatment.

Nicolas et al (1929) reported another series of 17 cases treated with bismuth. 10 cases were clinically cured and 7 cases markedly improved. No subsequent follow-up was made and therefore no details of relapses are available.

McKenna (1930) in his series of 14 cases described only 4 cases as clinically cured but 9 cases as greatly improved. As his cases were treated and observed for nine months only, details as to subsequent relapsed cases were not given.

Smith (1934) in a small series of 12 cases treated with Quinby, reported 3 cases as cured and 5 as markedly improved. Again no details of relapsed cases were given.

In each of the above series, no toxic effects were produced by the bismuth injections.

In America, Tolman (1938) treated 43 cases of the disease with injections of Bismuth Salicylate in Oil and reported 14 cases as clinically cured and 13 cases as greatly improved. Subsequent observation of his 27 satisfactory cases showed relapse and recurrence of the lesions in 5 of these.

He had reactions to the bismuth injections in 3 of his 43 cases.

As compared with gold, the number of individual series of cases treated with bismuth is relatively small. This is due to the fact that these are the only figures in the literature of Lupus Erythematosus Discoides treated with bismuth, which could be used in a comparative table with Mapharside.

In addition to the above, there will now be added the results recorded in a series of 30 cases investigated and treated in the Royal Infirmary, Glasgow. Of this number, 25 cases were treated by the writer. The results and treatment of the remaining 5 cases were obtained from the records. Of the 30 cases, 21 were females and 9 males. Their ages varied from twenty three to fifty seven years and the disease had been present from two months to twenty years.

All of the patients were treated throughout by injections of Bismuth Metal.

The 25 cases personally treated, received 0.3gm (1.5cc) Bismuth Metal by intramuscular injections at weekly intervals for ten weeks. Following this, a rest period of four weeks was given and then a second similar course of injections was commenced. A maximum of 6gms of bismuth

was therefore administered if complete treatment was received.

In the remaining 5 recorded patients, treatment was given by intramuscular injections of 0.2gm (1cc) Bismuth Metal at weekly intervals. The total amount of bismuth received by each patient varied from 3gm to 6gm. Injections were given in courses of eight to fifteen weeks, with intervening rest periods of six weeks.

All patients were treated as outpatients and no toxic reactions were observed, although in 6 of the writer's 25 cases (Cases 3, 6, 11, 14, 18 and 21) a "bismuth-line" was noted at the gum margin but as the patients appeared to be otherwise healthy, the injections were continued and no further signs or symptoms of toxicity developed.

Of the 25 cases treated by the writer, 20 were completely new cases and in these patients the same pre-treatment investigations were done as in the series treated with Mapharside. All cases had negative Wasserman reactions. The remaining 5 cases were patients who had previously received Mapharside treatment with little or no response.

A Tuberculous connection was present in 4 of the 20 fresh cases. 3 patients (Cases 7, 8 and 18) gave a history of enlarged Tuberculous glands in the neck during

childhood and 1 (Case 15), had a positive X-ray of chest, the film showing presence of past, but not recent, Tuberculous activity. Of the 5 cases previously treated with Mapharside. 2 patients (Cases 21 and 24) had the presence of Tuberculous glands in the neck and a third patient (Case 25) had Tuberculous glands and a positive X-ray of chest. The remaining 2 patients (Cases 22 and 23) had no evidence of past or present Tuberculosis. Of the 5 cases from the records, 1 (Case 30) had a history of Pulmonary Tuberculosis. No X-ray of this case was at hand, although from the record of the history, activity was not of recent years. So of the 30 cases treated with bismuth, 8 (26.7%) had a Tuberculous connection.

Only 2 patients (Cases 9 and 10) gave X-ray evidence of Sinus infection and these were mild and confined in both cases to the right antrum.

A synopsis of the cases is given in Table 6.

Using the same criteria for cure and marked improvement as in the series with Mapharside, the results of bismuth therapy were as follows:-

Total	Clinical Cure.	Marked Imprvmt.	Slight Imprvmt.	No Change.
30	12 (40%)	8 (26.7%)	3 (10%)	7 (23.3%)

TABLE 6.

No	Name	Sex	Age	Distribution	Duration	Quantity	Result
1	I.H.	F	42	Cheeks	1yr	2·4g	Cured
2	E.L.	F	45	Nose and left cheek	8yrs	6g	Markedly Improved
3	J.S.	F	29	Nose	2yrs	6g	Markedly Improved
4	J.M'P.	F	35	Nose, cheeks and lips	20yrs	6g	No Change
5	F.J.	F	29	Nose	2mths	4·2g	Cured
6	A.D.	M	43	Temporal regions	3yrs	6g	Markedly Improved *
7	T.M.S.	F	34	Nose and cheeks	10mths	4·8g	Cured
8	R.F.	F	38	Batswing	3yrs	4·8g	Markedly Improved
9	M.M.	M	42	Nose, cheeks and neck	5yrs	6g	No Change
10	J.Q.	M	30	Cheeks	18mths	3·6g	Cured
11	F.M'D.	F	39	Batswing	2½yrs	6g	Markedly Improved
12	I.R.	F	32	Forehead and ears	4yrs	4·8g	Slightly Improved
13	J.M'L.	F	36	Nose	1yr	4·8g	Cured *
14	R.B.	M	31	Nose and cheeks	5yrs	6g	Markedly Improved
15	J.H.	F	32	Batswing	2yrs	6g	Cured
16	M.B.	F	35	Batswing and forehead	3yrs	6g	Cured *
17	S.M'F.	F	23	Cheeks	6mths	6g	Cured

Table 6 (cont)

No	Name	Sex	Age	Distribution	Duration	Quantity	Result
18	W.B.	M	31	Cheeks, scalp and fingers	8yrs	6g	No change
19	J.W.	M	30	Cheeks and temples	4yrs	42g	No change
20	S.R.	F	28	Nose	18mths	3g	Cured
21	J.M'Q	F	57	Cheeks	3yrs	6g	Cured
22	J.D.	F	32	Cheeks and Scalp	3yrs	6g	Cured
23	W H	M	32	Scalp and Ears	4yrs	6g	Slightly Improved
24	T.H.	M	32	Cheeks and Ears	5yrs	6g	No Change
25	M.F.	F	29	Batswing	4yrs	6g	No Change
26	R.J.	F	38	Nose	2yrs	4·6g	Markedly Improved
27	A.L.	F	42	left cheek and nose	7yrs	4g	No Change
28	J.F.	F	36	Scalp and cheeks	5yrs	6g	Slightly Improved
29	A.S.	F	29	Right cheek	1yr	3g	Cured
30	T.W.	M	30	Batswing	3yrs	4g	Markedly Improved

* = Relapse ϑ = Defaulter.

A satisfactory result was thus obtained in 20 (66.7%) cases. Of the 8 cases with Tuberculous connections, 3 (Cases 7, 15 and 21) were cured, 1 (Case 30) markedly improved and 4 patients (Cases 9, 18, 24 and 25) showed no change in the clinical condition. One patient (Case 10) with X-ray evidence of sinus infection was classed as clinically cured and another patient (Case 9) showed no change.

Of the 5 patients previous treated with Mapharside 2 cases were clinically cured by injections of bismuth, 1 was only slightly improved and 2 showed no change in the clinical lesions.

Case 14 defaulted after twelve months of observation. At this time his clinical condition could still be classed as markedly improved. Other than this case, all remaining successfully treated cases were followed for at least two years after cessation of treatment. In this time, 3 cases had relapsed. Of these cases, 2 (Cases 6 and 13) had recurrences of the lesions within ten months and the remaining patient (Case 16) relapsed fourteen months after the cessation of treatment. It should be noted that none of the cases with Tuberculous connections relapsed. A final survey of the results thus showed that 18 (60%) cases gave a satisfactory response to bismuth therapy.

The results and toxicity of the various series treated with bismuth including the one recorded at the Royal Infirmary, Glasgow will now be summarised and compared with those of Mapharside in Table 7.

TABLE 7

Authority	Compound Used	Cases	Results of Treatment			Relapses (% of Satis. Results)	Reactions
			Cured	Markedly Improved	Satisfactory Results		
Sézary	Bismuth Hydrochloride	6	5	—	5 (83·3%)	1	No Data Given
Nicolas et al	Bismuth Hydrochloride	17	10	7	17 (100%)	—	—
McKenna	Various	14	4	9	13 (92·7%)	—	—
Smith	Quinby	12	3	5	8 (66·6%)	—	—
Tolman	Bismuth Salicylate in Oil	43	14	11	25 (58·1%)	5	3
Royal Infirmary	Bismuth Metal (Burr. Welcome)	30	12	8	20 (66·7%)	3	—
TOTAL of ABOVE		122	48 (39·3%)	40 (32·8%)	88 (72·1%)	9 (18%)	3 (2·4%)
MAPHARSIDE RESULTS		56	20 (35·8%)	17 (30·4%)	37 (66·2%)	5 (14%)	4 (7·1%)

Chapter XIII

COMPARISON OF BISMUTH AND MAPHARSIDE.

On examining Table 7 it would appear that the results of bismuth therapy in Lupus Erythematosus Discoides are more satisfactory than those of Mapharside. In both clinical cure and marked improvement, there is a slight gain of 3.5% and 2.4% respectively in favour of bismuth injections as against Mapharside. It can be argued however that these small gains are the results of unusually high figures recorded by Sezary in the clinical cure column and by McKenna in the marked improvement column. On the other hand, it should be noted that of the six authorities quoted, all but one namely Tolman, produced results superior to those of Mapharside. An interesting point however is that in the series of 30 cases treated with Bismuth Metal at the Royal Infirmary, Glasgow, only very slightly better results were obtained than in the Mapharside series. This result with Bismuth Metal is considerably lower than the average result of the six authorities.

Although bismuth shows a gain over Mapharside in both cured and improved cases, these figures are not of

such magnitude as to exclude completely the arsenical compound as a method of therapy in Lupus Erythematosus Discoides since it is the writer's opinion that any drug which can produce 66.2% of satisfactory responses to treatment in this disease must be classed as a reliable therapeutic agent. Supporting this belief and also a major point in favour of Mapharside, is the fact that of the 15 cases previously showing a poor response to bismuth treatment, 9 cases gave a satisfactory result after injections of Mapharside. As stated previously 5 cases were cured and 4 cases were greatly improved.

In comparison, only 2 of the 5 patients who had been Mapharside resistant gave a satisfactory result when treated by the writer with bismuth injections. Although the numbers are small they indicate that in Mapharside there exists a compound which can be used in obstinate cases of the disease.

A comparison of the results of both Mapharside and Bismuth Metal therapy in the cases with Tuberculous connections reveals no great difference in the merits of either metal although it is the general opinion that bismuth is much less liable to cause an acute flare-up of a quiescent or latent Tuberculous focus than Mapharside. This once again gives the advantage to bismuth.

From Table 7 it can also be seen that a total of 9 cases of relapses were reported by only three authorities in cases treated with bismuth. These 9 relapsed cases occurred in 50 satisfactory results and so the relapse rate is slightly higher than in the series treated with Mapharside. The difference however is not great enough to influence the choice of treatment. It is interesting to note that as with Mapharside, site and duration of the disease and quantity of bismuth given, appears to have no effect on the incidence of relapse.

As can be observed from the last column of Table 7 the toxic reactions with both Mapharside and bismuth are slight but it is obvious that preference must be given to bismuth, as over a larger series of cases, the number of reactions were definitely fewer with bismuth injections. The method of administration of bismuth is more simple and less dangerous than that of Mapharside as with intravenous injections of the latter, the least extravasation from a vein may cause severe pain and even abscess formation with necrosis at the site of injection. This complication however is extremely rare with intramuscular injections of bismuth.

As regards the minor point of expense of treatment, there is little to choose between the drugs.

As with Mapharside, apparent cure with bismuth does not appear to be related to the number of injections or dosage given, and the amount of drug required must be determined on an individual basis. As stated previously, McKenna (1930) pointed out that after bismuth therapy, scar formation was often minimal. This was noted in the Royal Infirmary series, especially in those cases where the condition was of the erythematous type and scaling was slight. The same phenomenon however was observed with Mapharside. The duration of the disease again influenced the chances of cure. This fact was observed and recorded by both Smith (1934) and McKenna (1930) and in the series of 30 cases treated at the Royal Infirmary, Glasgow, 9 of the 12 cases cured were of two years duration or less.

To summarise therefore, it can be observed from the above that the response of Lupus Erythematosus Discoides to Mapharside is inferior to its response to bismuth. This inferiority is noted not only in the number of clinical cures but also in the number of cases showing marked improvement. Contrary to its comparison with gold, Mapharside has few advantages such as decreased toxicity over bismuth to offset this poorer performance. The fairly high rate of satisfactory responses to Mapharside therapy however, together with the even more important response of bismuth resistant

cases to the arsenical compound would seem in the writer's opinion, to redeem this preparation and warrant its inclusion as a therapeutic agent of definite value in the treatment of Lupus Erythematosus Discoides.

Chapter XIV.

CONCLUSIONS.

56 cases of Lupus Erythematosus Discoides have been investigated and treated with Mapharside with a subsequent observation period of two and a half years. 20 (35.8%) cases were clinically cured and 17 (30.4%) cases markedly improved, thus making a total of 37 (66.2%) cases which could be claimed as satisfactory responses on immediate completion of treatment. During the observation period however, which seemed to the writer to be sufficient to determine the permanent nature of the results, 5 of the satisfactory cases relapsed, thus giving a final satisfactory response of 32 (57.1%) cases which for a disease such as Lupus Erythematosus Discoides must be considered a reasonable result. This fact in itself is sufficient to include Mapharside with the other metals used in the treatment of this disease.

Clinical cure did not appear to be related to the amount of drug administered and at present the quantity of Mapharside to be given has to be judged on an individual basis. A weekly dosage of 0.04gm or 0.06gm is suggested. Cure however does appear to be related to

the duration of the disease. In the majority of cases, the shorter the duration of the disease, the better seems to be the chance of cure.

Recurrence of the lesions did not appear to be related to the site, extent or duration of the previous lesions, but did seem most liable to recur within the first twelve months after cessation of treatment and so the longer the cure or improvement lasts, the more likely it is to become permanent.

Good results were obtained with the arsenical compound in cases giving evidence of Tuberculous connections and signs of focal sepsis. Thus it would appear that Mapharside can act in what the writer presumes at present to be the Tuberculous and non-Tuberculous types of the disease.

A comparison of Mapharside therapy with that of gold showed that the arsenical preparation although slightly numerically inferior in producing clinical cure, was much less toxic, had a lower relapse rate and did produce a slightly higher number of satisfactory responses. Thus, in the writer's opinion, it is of greater therapeutic value than gold in the treatment of this disease.

On the other hand, a comparison of bismuth with Mapharside, proved the arsenical compound to be inferior

in almost all respects to bismuth. This inferiority however was not of such magnitude as to exclude Mapharside as a method of therapy in Lupus Erythematosus Discoides.

In both comparisons, it was shown that Mapharside acted exceedingly well in cases which had proved resistant to previous therapy with gold and/or bismuth. This fact alone warrants the inclusion of the arsenical compound as a therapeutic agent in the treatment of Lupus Erythematosus Discoides, and even more so when it is taken into account that 57.1% satisfactory responses to the drug were obtained after a two and a half years observation period.

Finally it may be said that Mapharside can be added to the list of metals used in the treatment of Lupus Erythematosus Discoides and should occupy a position of therapeutic activity between gold and bismuth. There is also evidence that it may be used with moderate expectation of success in cases hitherto refractory to these two metals.

PART II.

INTRODUCTION.

In Part 11 of this Thesis, a further 74 cases of Lupus Erythematosus Discoides will be described and discussed. Detailed clinical investigations of the patients are included and an attempt to co-relate the reactions to various ointments of localised patches of the disease, with certain methods of treatment, will be made.

These investigations were primarily undertaken in an endeavour to increase the incidence of satisfactory results to treatment and it was also hoped to obtain an early guide to the prognosis and progress of the lesions.

Before describing the findings of the clinical investigations and ointment trials, a concise review of the literature of the aetiology of Lupus Erythematosus Discoides will be given. The writer considers this necessary as certain definite theories of causation had to be considered in the use of the ointments and, by the clinical investigations, supported or denied.

PART II.

CHAPTER I.

AETIOLOGY OF LUPUS ERYTHEMATOSUS DISCOIDES.

Although since the time of Casenave, much material has been written about the causation of Lupus Erythematosus Discoides, the aetiology of the disease has nevertheless remained one of the obscure problems of dermatology. In a study of the origin of such a disease therefore, all factors which may be predisposing, or actual causes in the production of the disease, must be considered.

The early writers led by the French dermatologists Halipeau (1892) and Besnier (1892) considered the condition to have a Tuberculous origin and to be due to a toxin of the Tubercle Bacillus. This theory was accepted and received support for a considerable number of years. Boeck (1898) described 42 cases of the disease of which 28 cases presented indisputable evidence of past or present Tuberculosis and in addition another 8 cases had presence of strumous ophthalmia. Thus eighty six percent of his series showed evidence of Tuberculosis in some form or other. Roth (1900) collected 250 cases from the literature and in 185 of these found signs of localised or general Tuberculosis. Other

writers have found a similarly high percentage and the association of Lupus Erythematosus with enlarged Tuberculous glands of the neck and elsewhere, has been reported by Sequeira (1913) and Ormsby (1943).

The statistics presented by Boeck and the other writers, led these writers to believe that there was a direct connection or relationship between Lupus Erythematosus Discoides and Tuberculosis. The basis for this theory was due to the regular findings in cases of Lupus Erythematosus Discoides of (a) a history of Tuberculosis (b) a positive reaction to the tuberculin test (c) clinical evidence of Tuberculosis and (d) evidence of past or present Tuberculosis at post mortem examination.

Freshwater (1912) first began to doubt the theory of the disease being due to the Tubercle Bacillus or its toxin, and in a small series of cases, found little evidence of the Tubercle Bacillus. Weiss and Singer (1918) extracted 225 cases of Lupus Erythematosus Discoides from the British Journal of Dermatology. Of this number 64 cases had notes on Tuberculous connections, of which only 18 gave evidence of clinical Tuberculosis. McLeod (1924) in a discussion based on 200 cases of the disease, was of the opinion that the Tubercle Bacillus had no connection whatsoever with Lupus Erythematosus Discoides. In a comparison of the incidence of

Lupus Erythematosus Discoides with Phthisis in this country he considered that the association of the two conditions was accidental. In his 200 cases, only five percent had evidence of Tuberculosis. In agreement with these figures, there are the results of Tolman (1938) who found only thirteen percent of his 122 cases had definite evidence of Tuberculosis. He also believed that little reliance should be placed on a family history of the disease. He was convinced that such a family history could be obtained in a similar percentage in other skin conditions. Also supporting the argument against the Tubercle Bacillus was Goeckerman (1921), who in a careful study of 56 cases investigated by four different methods, found that thirty six percent of his patients had Tuberculous connections. Of this percentage, more than half had only a family history of the disease. 56 other dermatosis which he selected at random had almost as high an incidence of Tuberculous connections (thirty two percent). What is more important, he found that in 37 cases diagnosed as definite Tuberculides, no less than eighty four percent of the cases presented clinical evidence of Tuberculosis. He considered therefore that the similarity of the incidence of Tuberculous connections in Lupus Erythematosus Discoides and other dermatoses, and the great difference in the incidence of Tuberculosis

in Tuberculides and Lupus Erythematosus Discoides was so striking that the latter condition could not have the pathogenesis of a Tuberculide in the accepted sense of the word.

This appears to contradict factors (a) and (c) aforementioned.

Turning now to factor (b) i.e. a positive reaction to the Tuberculin test, support was given to the French school of thought by Fordyce (1924) who reported positive focal reactions in 35 cases given intracutaneous injections of old Tuberculin. This result was later supported by Cannon and Ornstein (1927) in 15 of their patients whom they actually treated with Old Tuberculin. When positive Tuberculin reactions were thus obtained, the problem of aetiology was thought to be solved. But on the other hand Engmen and McGarry (1916) had reported similar focal reactions when using intravenous T.A.B. vaccine and McLeod (1924) also produced a definite response in the lesions with intramuscular injections of sterile milk albumin. These showed that such reactions can be produced by the introduction of a foreign protein and as neither Fordyce nor Cannon and Ornstein did control experiments with this, their findings are open to critisism.

The response of patients to intradermal Old Tuberculin

in cases of Lupus Erythematosus Discoides, lends practically no weight to the theory that there is a relationship between the disease and Tuberculosis as according to Weiss and Singer (1918), all individuals above twenty years and living in large cities, react to Old Tuberculin in moderate dilutions. A positive cutaneous reaction therefore in the opinion of these writers, means essentially that the reacting person has or has had a Tuberculous infection. It would seem therefore that argument (b) in favour of a Tuberculous origin of the disease can also be contradicted.

Now comes the last argument, namely the post mortem findings of Tuberculosis. Montgomery (1943) in 15 cases of Lupus Erythematosus Discoides which came to necropsy, could find signs of Tuberculosis in only 2 of the cases. Keil (1933) who reviewed the post mortem findings of 125 cases of the disease, found only 25 showing signs of Tuberculosis. Of these 25 cases, a number were of the Disseminated form of the disease.

Demonstration of the Tubercle Bacilli by Ziehl-Neelson's staining, in sections from patches of Lupus Erythematosus Discoides have been attempted but never successfully accomplished. This is not surprising when one appreciates the difficulty of finding the bacillus by this method in lesions of a known Tuberculous origin.

Undoubtedly experiments of greatest significence in the aetiology of Lupus Erythematosus Discoides are those in which a positive animal innoculation for the Tubercle Bacillus has been obtained. Bloch and Fuchs (1913) concluded that none of the evidence brought forward on behalf of Tuberculous aetiology is so strong that other evidence equally valid cannot refute it unless it is the results of positive animal innoculation.

Gougerout (1898) produced the first successful animal innoculation in two guinea pigs. In the same year, Ehrman and Reines (1898) had a successful innoculation in one case. The biopsy for this however came from a patient who had a definite papulo-necrotic Tuberculide in addition to Lupus Erythematosus Discoides. Bloch and Fuchs (1913), in carefully conducted experiments claimed four successful animal innoculations with Lupus Erythematosus tissue. Hereagain the value of the experiments is impaired by the fact that 3 of the patients had active Tuberculosis and 1 had a Disseminated type of Lupus Erythematosus and so must be eliminated. It would seem therefore that in such carefully controlled experiments as were done by these writers, much better material could have been chosen to prove the purely Tuberculous aetiology of Lupus Erythematosus Discoides. Cases without other clinical manifestations of Tuberculosis should have been

chosen. This was done by Jannon and Ornstein (1931) who produced five positive guinea pig innoculations in 23 cases of Lupus Erythematosus Discoides. These were well regulated and controlled experiments and were carried out only after a thorough examination of the patients to exclude the presence of Tuberculosis. No one has confirmed or confuted these last results in similar experiments.

To conclude therefore, when clinical observations recorded from the literature of Lupus Erythematosus Discoides were examined, there appears to be little evidence to support a belief in the Tuberculous aetiology of the disease. On the other hand, experimental investigation, at times has advanced seemingly convincing evidence of a Tuberculous origin.

Barber (1915) first emphasised the significence of focal sepsis in the aetiology of Lupus Erythematosus Discoides. He held the opinion that the disease could be the result of a streptococcal toxin or organism and demonstrated this in one case in which focus of infection, appeared to be in the intestines. The same writer (1919) substantiated his theory with a larger series of cases in all of which however, the focus of infection was the tonsils. The organisms in these cases were not isolated, but great improvement occurred in many of them after treatment with an autogenous

vaccine.

Hartzel (1920) in America produced evidence to support Barber and in this case, septic teeth seemed to be the focus of infection. Wallhauser (1924) examined the teeth in all cases of Lupus Erythematosus Discoides and found positive smears of fusiform bacilli and spirilla of Vincent in all cases of the disease. Throne (1925) examined 26 cases of the disease and found evidence of focal infection in no less than 23 of these. 19 had septic foci in the teeth, 2 in the tonsils and 2 in the sinuses but unlike Barber, he was of the opinion that vaccine therapy was useless.

Forman (1930) used intradermal injections of various Streptococcal vaccinesin 21 cases of the disease in an attempt to prove skin sensitivity to a specific antigen.

Since Barber first introduced this theory, a long list of possible foci of infection has been assembled and although most of the work has been directed against the Streptococci, other organisms have also been implicated. Burky and Hopkins (1936) in 12 cases of Lupus Erythematosus Discoides showed that there was an unusually intense response to a Staphylococcus toxin when injected intradermally. The reaction was much more active than in a controlled group of miscellaneous dermatoses.

While a large number of dermatologists accept this

theory of focal sepsis and/or toxin by excretion by these foci, others do not agree with it entirely. Schamberg (1920) in a discussion of Hartzel's paper is of the opinion that the findings of Streptococci constitutes no absolute proof of their etiological significence since they can be found in apparently healthy people. He produced eighty two percent streptococci from a hundred healthy students which when injected into guinea pigs proved lethal to these animals. In addition, improvement of the lesions with autogenous vaccines cannot be accepted as proof of a streptococcal origin for as stated previously, Engman and McGarry (1916) and later McLeod (1924) showed that improvement and even cure could be obtained by injection of a non-specific protein. Kelvin (1941) using intra-dermal injections with mixed streptococci - analogous to Mantoux reactions - failed to demonstrate any increased activity to the toxins of these organisms and only in 4 of the 40 cases tested did reactions to the injections occur. This iscontrary to the findings of Forman (1930).

It appears therefore that as with the Tuberculous theory, the evidence for and against a direct streptococcal origin of the disease is still in doubt and that while focal infections and their production of toxins may play an important role in many of the cases, they certainly do not constitute the sole cause of Lupus Erythematosus Discoides.

Factors which may have a predisposing influence on the development of the disease can now be considered. Freshwater (1912) drew attention to the frequency with which a weak peripheral circulation and accompanying chilblains occurred in association with Lupus Erythematosus Discoides. This observation was later made by McLeod (1924) in his series of 200 cases and it is now almost universally agreed that circulatory disturbances connected with a poor peripheral circulation are amongst the most important predisposing factors.

Many authorities have considered trauma or irritation to be important predisposing factors in the production of Lupus Erythematosus Discoides. Freshwater (1912) and later King-Smith (1921) gave strong evidence in favour of this theory. The latter writer found that no less than 18 cases out of his series of 49 patients gave a definite history of local injury. Sunburn and severe frostbite may be included in this capacity and many writers have thought that light in any form may act as a predisposing factor in the production of the disease.

The writer considers that the aetiologic factor of most importance in the disease is not the specific action of the Tubercle Bacillus, Streptococci or Staphylococci, but the unusual response to the infection on the part of the

individual with a predisposed and sensitised skin. In other words, the disease is an allergic response of the patient to an infection. As early as 1920 Stokes (1920) was of the opinion that Lupus Erythematosus Discoides might be the result of an allergic reaction to pyogenic organisms with some Tuberculous agent as the primary cause of the allergic state. He based this opinion on the reverse phenomena which could take place in Tuberculides. Thus Lupus Erythematosus Discoides might be regarded as an allergic manifestation of associated Tuberculosis and Streptococcal focal infection. If this infection-allergy in the skin is accepted, the writer suggests that a variety of scattered considerations becomes reconcilable to some extent with clinical experience. The allergic reaction very often occurs over the most light exposed parts of the face and light is a well recognised physical allergen. Physical allergens known to produce exacerbations of the disease such as cold and light, could act not only on their allergic merits but also as powerful local irritating agents to stimulate the injurious effect of an underlying infection allergy. Many other influences may still further increase the allergic effect. The sites of involvement have a rich congestive vascular background and so circulating allergens brought from distant points to this congested area might exacerbate or originate a discoid process in Lupus Erythematosus Discoides. In the opinion of Stokes and

Beerman (1944) emotion by causing flushing of this area and dilatation of the vessels with subsequent stasis of the blood flow may allow allergens.to react. Circulatory light sensitisers might be brought in increasing amountsby the blood stream, to these congested areas especially effected by light rays. This may be a cause of persistence or even the origin of the disease. Many substances have been thought to be the initial sensitising agents. Perhaps the two most often described are Lead and Porphyrins. The exact mechanism of the allergic phenomenon and sensitising agents is still unknown.

In addition to the above hypothesis of origin of Lupus Erythematosus Discoides, many other aetiological factors have been suggested but with little or no supporting evidence for them.

To conclude therefore, it is evident that the exact cause of the disease is still unknown but from the evidence produced it would appear that the condition is a toxic or more probably an allergic reaction of the skin produced by Streptococci or Tubercle Bacilli with circulatory disturbances and external irritation acting as exciting causes for the localisation of the disease. This theory will be subsequently surveyed in the light of details obtained from the cases investigated in Part 11 of the thesis.

Chapter 11

CLINICAL ANALYSIS OF CASES.

74 cases of Lupus Erythematosus Discoides were investigated in the second part of this Thesis. All patients attended as outpatients and they were treated irrespective of the extent or the duration of the disease. Of the total number of cases investigated, 52 were entirely fresh patients while the remaining 22 patients had received some form of previous treatment. In these 22 cases, all treatment had been stopped for at least three months prior to the commencement of the present investigations.

Of the 74 cases of the disease, 56 were female and 18 male - a normal sex ratio. The ages of the patients varied from twelve years to sixty three years and the disease had been present from two weeks to twenty four years.

During the patient's first few attendances, clinical investigations were carried out with a view to correlating certain of these clinical findings with results obtained from the application of various ointments. The resulting evidence was used to determine the methods of treatment of this disease and also to help in the formation of an early prognosis. The results obtained shall be described under the appropriate titles and finally discussed at the end of the chapter.

Connections with Tuberculosis and Focal infection.

A careful history was taken from each patient for evidence of Tuberculosis of chest, glands, bones or joints. In addition, a careful clinical examination of each patient was carried out and an X-ray of chest taken. The resultant findings are tabulated, together with a series of similar findings in a control group of miscellaneous Dermatoses. This latter group consisted of 10 cases of Psoriasis, 26 cases of Acne Vulgaris, 20 cases Contact Dermatitis, 4 cases of Rosacea and 6 cases of Infective Dermatitis. - See Table 1.

A history was taken from each patient regarding attacks of tonsillitis and sinusitis. Examination of the cases was carried out for signs of sepsis in the nose, teeth and gums, and throat. Swabs were taken from the throats of all patients and also from the gums in cases showing evidence of disease. The presence of a Haemolytic Streptococcus was regarded as a positive finding in these swabs. Sinus washouts and culture of the fluid was attempted but the results in 4 cases were so disappointing and the operation so distressing to the patients that further attempts were abandoned. An X-ray of Sinuses was done in every case together with an X-ray of teeth if this was thought to be necessary. The results of these investigations are tabulated in Table 2.

From Table 1 it can be seen that 31 cases of Lupus

TABLE I.

Lupus Erythematosus Discoides							Controls.						
Total Cases Affected = 31							Total Cases Affected = 9						
Cases	No	Pulmonary History	X-Ray of Chest	Glands	Bones etc.	Family History	Cases	No	Pulmonary History	X-Ray of Chest	Glands	Bones etc	Family History
							Psoriasis	10	—	1	1	—	1
							Acne Vulgaris	26	2	3	1	—	—
							Miscell. Dermat.	30	—	1	1	—	2
Lupus Erythematosus Discoides	74	1	15	14	2	10	Total	66	2	5	3	—	3

TABLE 2

Lupus Erythematosus Discoides — Total Cases Affected = 45						Controls — Total Cases Affected = 25					
Cases	No	Positive Throat Swabs	Clinical Tonsillitis	Sinus Infection	Gingivitis and Carious Teeth	Cases	No	Positive Throat Swabs	Clinical Tonsillitis	Sinus Infection	Gingivitis and Carious Teeth
						Psoriasis	10	3	3	1	—
						Acne Vulgaris	15	1	2	2	2
						Miscel. Dermatoses	25	4	5	3	3
Lupus Erythematosus Discoides	74	15	23	16	12	Total	50	8	10	6	5

Erythematosus Discoides showed Tuberculous connections. Of this number however 5 had no evidence of past or present Tuberculosis but had only a positive family history of the disease. 14 cases had Glandular Tuberculosis and in each case the cervical glands were involved. In 7 of these 14 cases, this involvement was the only sign of Tuberculosis and of the remaining 7 cases, 3 had positive X-ray of chest showing old, healed and now inactive lesions, a fourth had an associated Bazins disease and the fifth, sixth and seventh had also a family history of Pulmonary Tuberculosis. 15 of the above 31 cases had positive X-rays of chest. As noted above 3 cases had concurrent Glandular Tuberculosis, a fourth had an associated Tuberculosis of spine, a fifth a Bazin's disease, a sixth a past history of pulmonary and spinal Tuberculosis and in a further six cases of these 15, positive X-rays of chest were the only signs of past Tuberculosis. In all of these foregoing 14 cases, the disease was inactive, healed and of old standing. The fifteenth case actually developed active Pulmonary Tuberculosis during treatment and in this case alone an X-ray of chest revealed recent activity. This was present in the left apex. In the control series of dermatoses, it is of interest to note that only 9 cases of a total of 66 showed evidence of Tuberculosis and of this number 2 patients had only a strong family history of the disease. The

total incidence of Tuberculosis in the control series is much lower than that from the 74 patients with Lupus Erythematosus Discoides.

From Table 2 it can be observed that the fairly high figure of 45 cases showed evidence of focal infection. Of this number 16 cases had evidence of sinus infection. In the majority of cases this infection was limited to the maxillary antra although in a few cases there was a pansinusitis. Of these 16 cases 9 had sinus infection present alone, a further 3 had a history of previous attacks of tonsillitis, 2 had infected gums and the remaining 2 had a positive throat swab. 23 cases gave a history of previous attacks of Tonsillitis or Quinsy and showed clinical evidence of abnormal tonsils. Of this number, 9 cases had a positive throat swab, 3 a concomitant sinusitis and 2, X-ray evidence of focal infection in the teeth. Of the 74 cases of Lupus Erythematosus Discoides only 15 gave a positive throat swab. This number is very similar to the figure found in the control group of cases although the incidence of focal sepsis on the whole was considerably lower in the control series than in the cases of Lupus Erythematosus.

It is of interest to note, although the figures are not given in Table 2, that no less than 40 cases out of the 74 patients with the disease, gave a growth of Streptococcus Viridans on culture of the throat swabs. Sutton and Sutton

(1939) are of the opinion, that in a few cases of focal infection, this organism is the predominant and causal bacteria. It would therefore appear that the incidence of focal infection may be even higher than as stated above. With pyogenic Staphylococcus Aureus however, the opposite was found and only 16 of the cases gave evidence of this organism on culture of the swabs. This is of interest in view of the work done by Burky and Hopkins (1936). In the control series Streptococcus Viridans and Staphylococcus Aureus occurred in 20 and 17 cases respectively.

In considering the two groups of main causative factors i.e. connections with Tubercle Bacilli and organisms of focal infection, it is to be noted that of the 74 cases of Lupus Erythematosus Discoides, 51 patients had a history of Tuberculosis and 45 patients, a history or signs of focal infection. That is no less than 20 cases from the total number of 74 patients had evidence of both focal infection and Tuberculosis and 18 cases had evidence of neither.

Guinea pig innoculation and Culture.

As stated in the previous Chapter, the experiments of greatest significance in the aetiology of Lupus Erythematosus Discoides are those of animal innoculation. As so many conflicting reports have been given on the results of these experiments, a small series was attempted and in 16 cases a biopsy from diseased skin was taken. The cases were

selected impartially from the series of 74 cases and were done whenever a cooperative patient was found. Of the 16 cases, 11 had no evidence of Tuberculosis while in the remaining 5 cases, 1 developed active pulmonary Tuberculosis, 2 gave a history of Tuberculous glands in the neck and had a positive X-ray of chest, and 1 had a strong family history of Tuberculosis. The biopsy material was divided into three parts. The first portion was used to confirm the diagnosis of Lupus Erythematosus Discoides by histological examination. The second portion was made into an emulsion and injected into a guinea pig. The animal was killed three months later and carefully examined for evidence of Tuberculosis. From the third portion of tissue, an attempt was made to culture the Tubercle Bacillus and also any other pathogenic organisms by spreading an emulsion made from the tissue and sterile normal saline on numerous culture media.

In two instances, the innoculated guinea pig died prematurely in twenty and twenty one days respectively but in neither animal was there any sign of Tuberculosis. The biopsy specimens used for these two animals were taken from cases 21 and 39. In the remaining fourteen guinea pigs, no positive evidence of Tuberculosis was found when they were killed and examined after the three months interval. Similary, all attempts to culture the Tubercle Bacillus and other pathogenic organisms

from the diseased tissue yielded negative results. The significance of these findings will be discussed at the end of the Chapter.

Mantoux reactions.

Mantoux reactions were done in all cases in the present series. In addition to these, the test was also done in 20 of the cases in Part 1 of the Thesis. 4 of these 20 cases however are again included in this part of the Thesis as these cases were transferred from the Mapharside series. A total of 90 cases of Lupus Erythematosus Discoides therefore were tested for Mantoux reactions. Kelvin (1941) using, in the writer's opinion, the exceptionally low dilutions of 1 in 750 to 1 in 100 Old Tuberculin in 62 of his 86 cases, attempted to prove the Tuberculous etiology of the disease by these Mantoux reactions. The 90 cases done by the writer were not used for this purpose, but were carried out to test the sensitivity of the patient to Old Tuberculin and to determine whether they were perhaps more than normally sensitive to this substance. It was also hoped, if possible, to corelate these results with other clinical findings and reactions from various ointments to be described later. In the first 27 cases, a dilution of 1 in 10,000 Old Tuberculin was used. In the next 42 cases however, the Old Tuberculin was diluted still further and a 1 in 100,000 dilution was administered. Of these 42 cases, 15 showed a positive result to this high dilution.

In the negative 27 cases and also in the remaining 21 cases of the series a 1 in 10,000 dilution was again used. A total of 77 cases therefore received Mantoux tests with a dilution of 1 in 10,000. A positive result was obtained in 47 of these cases. In 22 cases of the 30 cases still negative, a dilution of 1 in 1000 was subsequently used and 16 positive results were obtained.

In addition to the cases of Lupus Erythematosus Discoides, 20 cases of miscellaneous dermatoses were tested with a dilution of 1 in 100,000 and 30 dermatoses with a dilution of 1 in 10,000. Of the 20 cases only 2 gave a positive reaction and in the series of 30 cases 11 reacted to the Old Tuberculin. These 50 cases were used as a control series of reactions. Finally, in 20 of the 42 cases of Lupus Erythematosus Discoides tested with the 1 in 100,000 dilution, a control experiment was carried out. In this 0.1cc of 1 in 1000 dilution of horse serum intradermally. This was done to exclude the possibility of the Tuberculin reaction being caused by a non-specific foreign protein. In all cases of Mantoux reaction the results were read at 48 hours and 72 hours after injection, and if a reaction was present the diameter of this was measured. The results of the tests are summarised in Table 3.

Wasserman results.

Wasserman and Kahn tests were done in all cases. In

TABLE 3.

Lupus Erythematosus Discoides			Controls		
Dilution of Old Tuberculin	Cases	Positive Results	Dilution of Old Tuberculin	Cases	Positive Results
1/1,000	22	16	———	———	———
1/10,000	77	47	1/10,000	30	11
1/100,000	42	15	1/100,000	20	2
1/1,000 Horse Serum	20	1	———	———	———

only one case (41) was a doubtful Wassermen reaction reported. Further examination of the blood was requested but again the result of the test was doubtful.

Injury.

Because of the belief that local irritation or injury might act as a predisposing factor in the cause of the disease, a careful history in the 74 cases was taken of anything which might be construed as injury or hurt. In the 74 cases such a history was obtained from only 20 patients and in no less than 11 of these, the injury was due to excessive exposure to the sun, in other words, sunburn. In another 2 patients, frost-bite was thought to have brought about the start of the disease. In the remaining cases, a burn, irritation from a cigarette paper, a stye, a carbuncle and in 3 cases a scratch which became scaondarily infected, were thought to be the points of origin in the disease.

Circulatory Disturbances.

Because of its importance as a predisposing factor in the cause of the disease, the patients were questioned and examined for the presence of chilblains, erythrocyanosis of the extremities, and any other circulatory disturbances. Evidence of disturbances of this nature, was found in 32 of the 74 patients. In 27 cases there was a history of definite evidence of chilblains usually present on the feet or hands. In 4 cases there was marked erythrocyanosis of the lower legs and in 1 patient (Case 64), the hands presented changes similar

to those found in Raynaud's disease. For the purpose of a control series of cases, similar examinations were made in a miscellaneous group of dermatological cases. 70 consecutive fresh cases were investigated as they reported for treatment at the out-patient dispensary. Of this number, only 18 cases had evidence of circulatory disturbances. 16 cases suffered from chilblains and 2 patients had erythrocyanosis of the legs.

Light.

It has been thought for many years that light was one of the causative factors in the production of Lupus Erythematosus Discoides. McLeod (1924) and Ludy and Dorsin (1938) were of the opinion that light was of great importance in the production of the disease, its continuance and its acute exacerbations. In addition, Calloway and Stokes (1938) held definite opinions that exposure to strong sunlight caused a high incidence of relapse in cases which had been healed and cured. The writer's findings in Part 1 do not agree with this opinion. A survey was therefore taken in this present series of patients in which the lesions were irritated in any way by exposure to sunlight. In addition porphyrin examination of the urine was done in a few cases to detect if any increase in these substances was present or not in their excretion. Owing to difficulties in having this estimation performed however, the number of cases had to be very limited and only 8 cases had their porphyrin

excretion examined.

Of the 74 cases, 35 patients gave a history of irritation or exasserbation of the lesions on exposure to strong sunlight. Further in 1 of these cases, ultra-violet light therapy for Acne Vulgaris of chest and back irritated the lesions of Lupus Erythematosus Discoides on the face to such a degree that light therapy had to be suspemded.

At this stage it may again be noted that in 11 instances, the disease was thought to have occurred after sunburn of the face.

In addition to these cases, the seasonal incidence of Lupus Erythematosus Discoides was charted for the twenty year period 1927 to 1946. The graph for this period is shown in Table 4. From this graph it can be seen that there is a steady rise in the number of cases of the disease throughout the early summer months. This would seem to indicate that the greatest incidence of the disease, occurs during the period of maximum sunshine.

White blood cell investigations.

In 42 of the present series of cases, white blood counts and complete differential cell counts were done at the first, second and third visits of the patients prior to administration of internal treatment. In addition similar investigations were carried out at the end of the second,

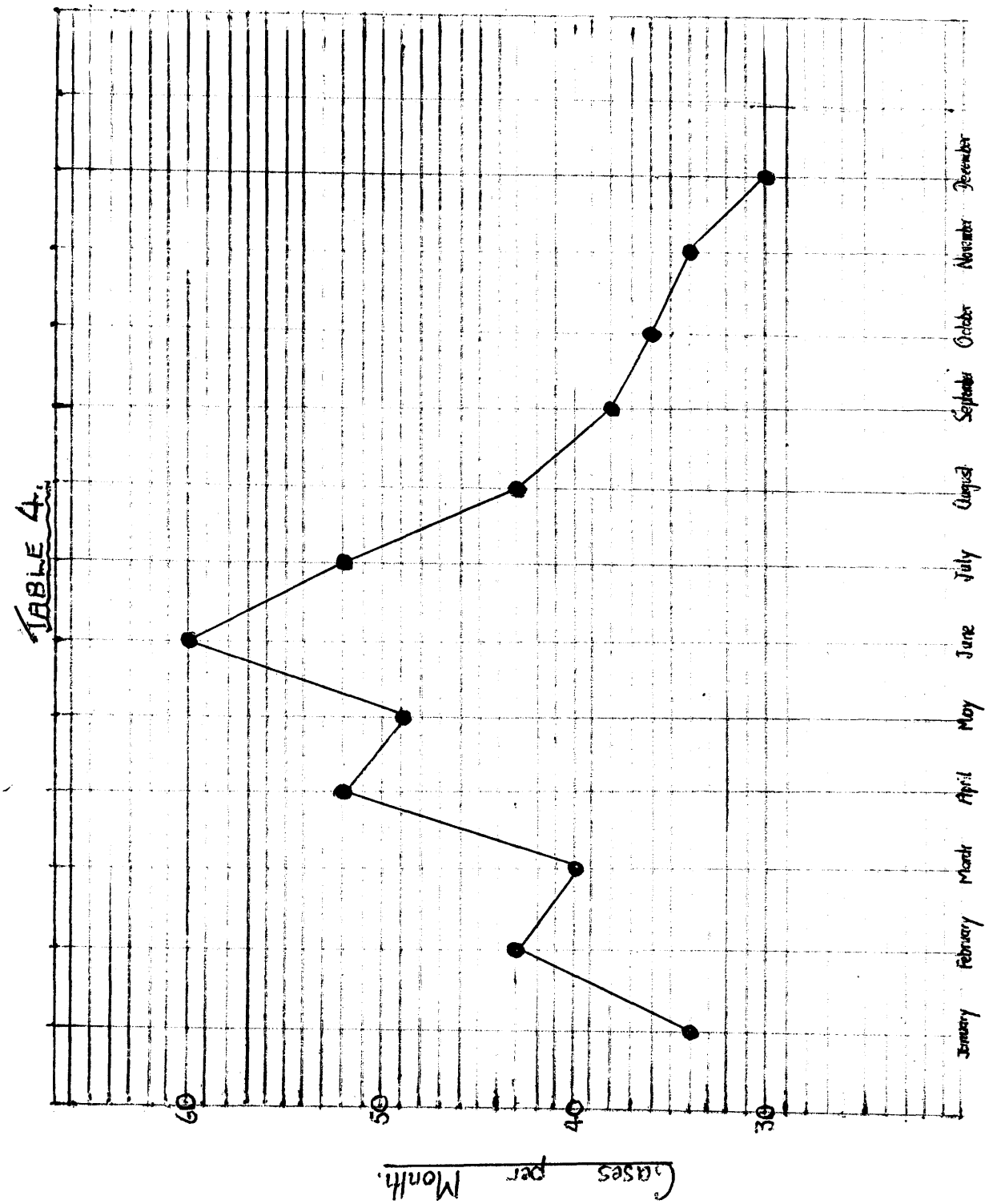
TABLE 4.
Cases per Month.
60
50
40
30
January
February
March
April
May
June
July
August
September
October
November
December

sixth and twelfth weeks of treatment. Of these white blood counts numbering 252 in all, only 8 fell below 4,000 per cubic millimetre while 5 rose above 9,000 per cubic millimetre. These figures of 4,000 and 9,000 per cubic millimetre are, according to Juster (1936) the lower and upper limits of normality. Differential white counts failed to reveal any abnormality amongst the cells.

Blood Sedimentation Rates.

Blood sedimentation rates were done on all patients in the present series. The Westergren method was used in each case and the erythrocyte sedimentation rate was estimated at the first attendance and then again eight weeks after treatment had commenced. If the patient was showing improvement under treatment, the sedimentation rate was once again taken at the end of treatment. No tests were done during menstruation or if the patients appeared to be suffering from any complicating disease at the time. This included such troubles as common colds and influenza etc. Westergren (1926) was of the opinion that a sedimentation rate of one to three millimetres at the end of one hour was normal in the male and four to seven millimetres in the female. Other authorities however have thought the normal to be considerably higher, and so for this Thesis, any reading below ten millimetres in the first hour was regarded as within normal limits. Between ten and twenty millimetres was

thought to be moderately pathological, from twenty to thirty millimetres definitely abnormal and over thirty millimetres, very decidedly pathological.

In addition to the sedimentation rates in the 74 cases of Lupus Erythematosus Discoides, similar investigations were carried out in 70 miscellaneous dermatoses as a control series. This control series consisted of 10 cases of Psoriasis, 15 cases of Acne Vulgaris, 20 cases Sensitisation Eczema, 5 cases Lichen Planus, 10 cases Urticaria, 6 cases Alopecia Areata, and 4 cases Granuloma Annulare. The results of the sedimentation rates in the cases of Lupus Erythematosus Discoides and the control series are recorded in Table 5.

From Table 5 it is easily seen that in Lupus Erythematosus Discoides, no less than 25 (33.8%) cases were moderately pathological, 26 (35.1%) cases were definitely abnormal and a further 8 (10.8% cases were very decidedly pathological. A total of 59 (79.1%) cases gave a result which was above normal. In the control series on the other hand, no less than 55 (78.5%) cases presented figures which had to be accepted as within the limits of normality.

The reason for the investigations into the Erythrocyte Sedimentation Rates will be discussed later in the Thesis.

TABLE 5.

LUPUS ERYTHEMATOSUS DISCOIDES						CONTROLS					
CASES	No	A	B	C	D	CASES	No	A	B	C	D
		1 - 10mm in 1hr	10 - 20mm in 1hr	20 - 30mm in 1hr	30+ mm in 1hr			1 - 10mm in 1hr	10 - 20mm in 1hr	20 - 30mm in 1hr	30+ mm in 1hr
						Eczema	20	15	4	1	—
						Psoriasis	10	9	1	—	—
						Acne Vulgaris	15	11	2	2	—
						Urticaria	10	8	2	—	—
						Alopecia Areata	6	4	2	—	—
						Lichen Planus	5	4	—	1	—
						Granuloma Annulare	4	4	—	—	—
Lupus Erythematosus Discoides	74	15	25	26	8	TOTALS	70	55	11	4	—

Chapter 111.

DISCUSSION ON CLINICAL OBSERVATIONS.

As was stated at the beginning of Part 2 of the Thesis, certain theories of causation had to be considered before ointment reactions could be fully appreciated and it is suggested that the clinical findings may now be examined in order to support or deny the theory of causation culled from the literature.

The histories and examination of cases of Lupus Erythematosus Discoides for Tuberculosis and the comparison of these with the control series, seem to indicate that there is some evidence in favour of a connection between the Tubercle Bacillus and Lupus Erythematosus Discoides. In 74 cases of this disease, no less than 26 showed definite evidence of Tuberculosis and another 5 patients had a strong family history of the disease. In the control group on the other hand, only 7 cases had evidence of Tuberculosis. This group consisted of 66 cases of miscellaneous dermatoses. In addition to the 7 cases with Tuberculous connections another 2 cases had a family history of the disease and so the final number of cases with Tuberculous connections is much smaller than in the Lupus Erythematosus series.

On the other hand, a comparison, judged from clinical

evidence of tonsillar infection, gum infection, X-ray diagnosis of Sinusitis and teeth infection, and the presence of Haemolytic Streptococci in the throat swab, between the incidence of focal infection in the 74 cases of Lupus Erythematosus Discoides and 50 cases of miscellaneous dermatoses would appear to indicate that focal infection and its causal organisms are closely related to the aetiology of the disease of Lupus Erythematosus Discoides. If note is taken of the increased frequency of Streptococcus Viridans in the series of this disease, this opinion is strengthened.

From these results therefore it would appear that both groups of organisms, the Tubercle Bacillus and those of focal sepsis, may be connected in some manner to the cause of Lupus Erythematosus Discoides.

From the series of guinea pig innoculations, none gave a positive result and in addition, an attempt to culture the Tubercle Bacillus and other pathogenic organisms from the diseased tissue yielded similarly negative results. As the patients from whom the biopsies were taken showed evidence of Tuberculous or focal infection, the series can be taken as a representation of the whole. It may be stated then that the Tubercle Bacillus or other pyogenic organisms per se, have little or nothing to do with the production of the lesions of Lupus Erythematosus Discoides.

Although Kelvin (1941) thought he could postulate a Tuberculous origin from Mantoux results alone, it is not the writer's opinion that this can be done. On the other hand Forman (1930) using intradermal tests with Streptococci and Staphylococci attempted similar sensitivity tests but stated that a positive reaction in the skin does not allow one to infer that the antigen is responsible for the skin disease present. He noted that the disease may be due to the organism itself, or perhaps to a state of sensitivity to it. This state of allergy may then allow another factor to become active.

The Mantoux reactions and the controls with Horse Serum in the case of Lupus Erythematosus Discoides and the control series of miscellaneous dermatoses, were carried out in an attempt to prove an increased specific sensitivity of the skin. Although the figures observed from Table 3 seem to give a clear margin of increased sensitivity which is specific for the Tubercle Bacillus in cases of Lupus Erythematosus Discoides, it must be noted that 6 of the 15 cases reacting to 1 in 100,000 Old Tuberculin had definite personal evidence of Tuberculous infection, and so a positive result even to such a high dilution as 1 in 100,000 could be expected.

The 1 patient (Case 42) which reacted to the 1 in 1000

Horse Serum had been given treatment with Antitetanic Serum for a deep cut in the leg.

No similar tests were done with Streptococci for it was hoped that by the use of various ointment reactions, similar, or even more definite evidence as to the sensitivity of the skin would be obtained and thus in future replace these intradermal tests and, what is more important, indicate more specific methods of treatment.

The role of predisposing factors in the cause of Lupus Erythematosus Discoides has been stressed in the previous chapter, and the clinical findings in the 74 cases were noted. It does not appear that local trauma or external irritation have much influence as predisposing factors. In only 20 of the 74 cases was there a history of injury preceeding the onset of the disease. On the other hand, circulatory disturbances do seem to take a definite place in the production of the disease. This is evident from comparison of the figures for such disturbances in the 74 cases of Lupus Erythematosus Discoides and the control group of 70 cases of miscellaneous dermatoses. In the former group there were 32 patients with evidence of circulatory disturbances while in the control series only 18 cases had such evidence.

The other important predisposing factor, light, also seems to play an important part as a subsidary cause of the disease,

and in no less than 35 of the patients, exposure to sunlight caused irritation or exascerbation of the diseased lesions. To substantiate this claim, there is the fact that the incidence of the disease over a twenty year period shows a very definite peak during the early summer months . Of the 8 cases who had urinary porphyrins estimated, all were within normal levels but the number is much too small to allow definite conclusions to be drawn, although it might be said that these cases indicate the fact that porphyrins are not the only sensitising agents which act on the skin.

An interesting point in the clinical findings is the continual absence of positive Wasserman reactions. This is noteworthy on account of the findings of Schauman and Heder (1927) who were of the opinion that in a relatively large number of cases of Lupus Erythematosus Discoides this test was positive when a large quantity of serum was used. Further it was thought when bismuth therapy was first used that its curative powers were due to its antisyphilitic properties. This has now been proved to be entirely fallacious.

From the clinical findings therefore, it is evident that the role of contributory or predisposing factors in the production of Lupus Erythematosus Discoides is considerable. They may be the factors which act on a skin previously prepared for them by the Tubercle Bacilli or organisms of focal

infection. In other words, there is an allergic state of the skin with circulatory disturbances, exposure to light and, in a few cases, local trauma, acting as the trigger which sets off the manifestation of the allergy i.e. the lesions of Lupus Erythematosus Discoides.

A most important point will now be discussed - the question of activity of the lesions and their prognosis. In the hope that they might throw light on this seldom discussed section of Lupus Erythematosus Discoides, white blood cell investigations and erythrocyte sedimentation rates were done.

As stated previously, a complete investigation of the white blood cells in 42 patients was done at each of the first three visits of the patients. This was done in an attempt to standardise the typical blood picture for each individual patient. Further complete white cell investigations were done at the end of two weeks treatment and again at the end of six and twelve weeks of treatment. These investigations were done in the hope that some abnormality might be detected in the total and/or differential white cell counts. Its correction or otherwise by treatment might then have given some indication as to the prognosis of the case and its progress. From these figures described previously, it is seen that only 13 white blood cell counts from a total of 252 fell without the normal limits of 4,000 - 9,000 per cubic millimetre and that in no case did

differential counts reveal any abnormality. It can be stated therefore that the initial blood investigations did not reveal sufficient deviations from the normal to be significant. The effects of treatment, produced neither a leucopoenia nor a leucocytosis and the differential cell counts still remained within the bounds of normality. It was evident therefore that an investigation of the white blood cells could give no valuable indication as to the progress or prognosis of the lesions of the disease, and so they were abandoned in the remainder of the series. It is interesting to note that Weiss, Lane and Bagby (1937) in an investigation of an almost similar number of white blood cell counts but in a smaller series of cases, found definite evidence of a leucopoenia, and these writers were of the opinion that there is a tendency toward a low leucocyte count in patients with Lupus Erythematosus Discoides. They state that this low count is a diagnostic feature of the disease and should act as a guard against very active treatment. Although the conclusions of these authorities have been widely accepted in America, without apparent confirmation however, they do not conform with the writer's experience and he is of the opinion that from the regular study of the white blood cells, no help can be obtained in the establishment of a diagnosis of Lupus Erythematosus Discoides or of the type of therapy to be used in the disease.

Although the performance of erythrocyte sedimentation rates are very frequently done in Sanatoria and during the treatment of Rheumatism and many other medical disorders, to judge the progress of a case, little use of this simple test seems to have been made in Dermatology. Tulipan and Director (1933) used the readings of erythrocyte sedimentation rates as aids in the differential diagnosis of closely allied skin diseases. It is noted that the results of these writers in a very small series of 10 cases of Lupus Erythematosus Discoides are contrary to those of the writer, as 9 of their cases had rates within normal limits. The writer used erythrocyte sedimentation rates, not for the same purpose as Tulipan and Director, but to obtain, if possible, an early prognosis in cases of Lupus Erythematosus Discoides, and also give information as to the state of activity of the lesions and their subsequent progress under treatment.

From the results in Table 5 it can be seen that no less than 59 of the 74 cases of Lupus Erythematosus Discoides gave readings which could be regarded as abnormal. As a comparison to this figure, only 15 cases from a collection of 70 miscellaneous dermatoses, also detailed in Table 5, gave abnormally high readings.

It would appear therefore, that the erythrocyte sedimentation rate has a definite relationship to the lesions

of Lupus Erythematosus Discoides and it now remains to be seen whether or not a concrete theory can be formed from this relationship as to the state of activity and early prognosis of the disease.

The types of lesion, and the frequency with which they were to be found in each group of erythrocyte sedimentation readings, will now be considered. For this purpose, the readings will be divided into Groups A, B, C and D as shown in Table 5.

Group A consists of cases with an erythrocyte sedimentation rate of under 10 millimetres in the first hour.

Groups B & C consist of cases with an erythrocyte sedimentation rate of between 10 and 30 millimetres in the first hour

Group D consists of cases with an erythrocyte sedimentation rate of 30 millimetres or over in the first hour.

Two main types of lesions must be identified for consideration under each group - 1). Typical Seborrhoea - like lesions which as described in Part 1 of the Thesis are patches of Lupus Erythematosus Discoides characterised by dull erythematous, infiltrated, raised and apparently inactive nonspreading edges. The centres of these lesions are depressed and covered with thick yellowish-grey or white adherent scales. The duration of these lesions varied between three months and twenty four years.

2). Erythematous lesions with dilatation of the follicles and

erythema, the most pronounced features. Scaling is usually slight or absent and although induration of the borders may be present, they are not thickened or raised.

Group A consisted of 15 patients, 4 of whom had lesions of the seborrhoeic variety, and 11 of the erythematous type. The 4 patients (Cases 6, 46, 47, and 62) with the seborrhoeic lesions did not respond to treatment and could be classified as failures. It appears therefore that in cases clinically chronic in appearance and combined with a low erythrocyte sedimentation rate indicating that the disease process is only slightly active, the prognosis is poor. In the 11 erythematous patients however, 8 were clinically cured and 3 markedly improved i.e. a satisfactory result was obtained in every case, so it appears that in the erythematous type of lesions, a low grade of activity, indicated by a low erythrocyte sedimentation rate, seems to point to an excellent prognosis.

Groups B and C consisted of 51 patients, 25 of whom had erythematous lesions and 23 of whom had seborrhoea lesions. 2 of the remaining 3 cases (patients 65 and 67) had the rarer telangiectatic lesions while the third patient (Case 8) had the nodular deep seated type of lesion which incidentally often simulates Sarcoid of the skin and may present a difficulty in diagnosis. Of the 23 patients with seborrhoeic types of lesion, no less than 19 patients responded well to treatment and only 4

(Cases 6, 17, 26 and 57) could be classed as failures. As stated previously in Group A, the clinically chronic appearance of this type of lesion, if considered by itself, does not indicate a good prognosis but when taken into consideration with the erythrocyte sedimentation rate, it will be observed that this test indicates a moderate activity in the diseased areas. These observations therefore bring us to a second point of interest, namely that in patients such as the latter 23 with seborrhoeic lesions and erythrocyte sedimentation rates moderately raised, thus showing activity in the lesions, the prognosis is good in spite of the clinically chronic appearance of the lesions and treatment offers reasonable chances for recovery. In the 25 patients with erythematous type lesions, all but 3 (Cases 7, 66 and 72) gave a satisfactory response to treatment. In detail, 12 cases were clinically cured and 10 markedly improved. In the 6 patients with unusual forms of the disease, all responded well and could be classed as clinically cured. If the erythematous type lesions in Groups B and C are compared with the erythematous cases in Group A, the percentage of clinical cures in Groups B and C is seen to be less. It would seem therefore that in the erythematous type of lesion, the erythrocyte sedimentation rate, although not so definite a guide to prognosis as in the seborrhoeic variety of the disease, does indicate nevertheless the chance of cure. The lower the erythrocyte sedimentation rate, the

better the chance of cure. It will be noted that this is contrary to the findings in the case of the seborrhoeic type of the disease as described before.

Group D consisted of 8 patients, 3 of whom had the seborrhoeic type of lesion and 5 of whom had the erythematous variety. In all 8 patients the lesions were numerous and widespread and even the seborrhoeic cases showed evidence of intense activity as indicated by bright erythematous and more than normally infiltrated and thickened borders. It is to be noted that irrespective of the type of lesion, satisfactory results from treatment were few and occurred in only 2 patients (cases 56 and 63) both of whom had an erythrocyte sedimentation rate of 32 millimetres, in the first hour. It would appear therefore that in cases of Lupus Erythematosus Discoides, with an erythrocyte sedimentation rate of more than 35 millimetres in the first hour, no matter what the variety of the clinical lesion, a poor prognosis is indicated and response to treatment is doubtful.

To conclude, there appears to be sufficient evidence to show that in Lupus Erythematosus Discoides the erythrocyte sedimentation rate is a reliable and yet simple test as to the state of activity of the lesions and as an early indication of their prognosis. The effect of treatment on the erythrocyte sedimentation rates will be discussed at the end of the appropriate chapter.

Chapter IV.

OINTMENT THERAPY.

As described at the beginning of this part of the Thesis, various ointments were used in the 74 cases of Lupus Erythematosus Discoides in order to elicit certain reactions from the lesions of the disease. The types of ointment used, their method of application and the results obtained therefrom will now be described. The significance of the results and the purpose behind the use of the ointments will be discussed in detail after the results of certain chosen methods of treatment have been described in the next chapter.

Types of ointment used.

For use as local application, 5 different types of ointments were used. These were as follows:-

(a). Mixed Streptococcal ointment.
(b). Streptococcus Pyogenes ointment.
(c). Staphylococcal ointment.
(d). Tubercle ointment.
(e). Horse Serum ointment.

The Horse Serum ointment was included in the series so that reactions which might occur with the other ointments could be classed as specific and not accounted for as non-specific foreign protein reactions. If the reactions to ointments a, b, c and d, were non specific in character and due only to a foreign protein, then a reaction could be reasonably expected from the Horse Serum ointment.

As the same ointment base and preservative was used in each preparation, there was no need for a control to be made of these.

The various ointments were prepared as follows:-

(a). Mixed Streptococcal Ointment.
This ointment was prepared from Parke Davis and Co's Mixed Streptococcus Vaccine containing 2,000,000 organisms per c.c chiefly derived from the bowel. 0.8c.c. of the vaccine and 1c.c. of 5% phenol was added to 16 c.cs of Eucerine which was used as the ointment base. The final concentration of the vaccine was therefore 1,600,000 organisms in a total of 17.8c.c. ointment with a phenol concentration of 0.3% as preservative.

(b). Streptococcus Pyogenes Ointment.
This ointment was prepared from Parke Davis and Co's Streptococcus Pyogenes Vaccine. This vaccine is prepared from cultures of Streptococcus Pyogenes - haemolytic strains and contains 20,000,000 organisms per c.c, and the vaccine was first diluted with an equal quantity of 5% phenol saline. The ointment was then prepared exactly as in the mixed streptococcus ointment. The final concentration of the vaccine was again 5% but this time with a total of 8,000,000 organisms in 17.8c.c.s of the ointment base.

(c). Staphlococcus Ointment
To prepare this ointment Parke Davis and Co's staphylococcal Vaccine was used. This in turn is prepared from cultures of mixed Staphylococci and contains 500,000,000 organisms

per c.c.

The vaccine was diluted 1 in 50 times with 0.5% phenol saline and as before, 0.8c.c. of this diluted vaccine was used with 1c.c. of 5% phenol in 16 c.cs. of Eucerine base. The resulting concentration was again 8,000,000 organisms to 17.8c.cs ointment with a phenol concentration of 0.3%.

(d). Tubercle Ointment.
For this ointment, Parke Davis & Co's Tubercle Vaccine of bacillary extract was used. The product used contained 1/100mgm Tubercle powder in each c.c. of vaccine.

Once again a 5% ointment was prepared by mixing 0.8c.c. of the vaccine in 16c.cs Eucerine and adding 1c.c. of 5% phenol. The final concentration of Tubercle powder was therefore 0.008mgm in 17.8c.cs of ointment.

(e). Horse Serum Ointment
For the preparation of this last ointment, "Horse Serum No. 1" produced by Burrough's Wellcome was used.

As before the ointment was obtained by mixing 0.8c.c. of the Horse Serum in 16c.c.s Eucerine and adding 1c.c. of 5% phenol as a preservative.

During the preparation of all these ointments, completely sterile methods were employed. The ingredients were mixed at room temperature without the aid of heat, and all ointments were prepared for use in individual universal containers. Fresh supplies of ointment were prepared every five weeks.

Method of use.

Each ointment was used by the patient in the order stated below, namely:-

1. Mixed Streptococcus Ointment.
2. Streptococcus Pyogenes Ointment.
3. Staphylococcus Ointment.
4. Tubercle Ointment.
5. Horse Serum Ointment.

To apply the ointment, the patient was asked to remove a little of it from the universal container with the handle of a sterilised teaspoon and then, with thoroughly washed fingers, lightly rub half of it into the selected lesion of Lupus Erythematosus Discoides. The remainder of the ointment was then rubbed into the surface of the normal skin on the forearm. This was done as a method of control for any reaction which might take place in the diseased areas of Lupus Erythematosus Discoides.

In cases of the disease which had multiple discoid plaques, only one or two areas were selected for ointment medication. The chosen ointment was applied morning and night for a week. If at the end of that period there was no reaction, the case was classed as negative and the next ointment was used.

If a reaction to the ointment did take place, all treatment was stopped for a week, or until the reaction had subsided completely and then the next ointment was given for application.

Ointment Results.

Reactions to ointments were classed under three headings (1) Negative, (2) Slight and (3) Definite.

A negative result and its sequence has already been explained. The term slight was applied to a reaction in which the diseased area treated with ointment became more erythematous, itchy and burning. A definite reaction was considered to have taken place when the area became much more erythematous, oedematous and infiltrated, and occasionally produced a serous discharge. In these cases, the patches felt very hot and were often painful and tender.

As stated above, five different ointments were used in the experiments and so five different types of reactions could have arisen in each case. This however did not happen and the various reactions to the different ointments are summarised in Table 6.

From this Table it can be seen that of the 74 cases of Lupus Erythematosus Discoides investigated with the ointments, no less than 52 cases showed 56 vatieties of reactions. Of this number, 36 reactions could be classified as definite and 20 as slight.

Of the 35 reactions which occurred with Streptococcal ointments, 14 occurred with Mixed Streptococcus and 9 of these could be classed as definite and 5 as slight. The remaining 21 reactions occurred with Streptococcus Pyogenes ointment and

TABLE 6

Total Cases	Total Cases to React	Ointment Reactions				
		Horse Serum and Staphylococcus	Mixed Streptococcus	Streptococcus Pyogenes	Tubercle	Total Reactions
74	52	—	14	21	21	56

TABLE 7.

	Cases with both Causes.	Cases with neither Cause.
Total Cases	20	18
Cases showing Reactions	18	16
Mixed Streptococcus	4	7
Streptococcus Pyogenes	6	5
Tubercle	10	5
Total Reactions	20	17

of these 14 were definite and 7 slight.

There were 21 reactions to the Tubercle ointment and of these 13 were definite and 6 slight.

It is interesting to note that not a single reaction was recorded from either the Staphylococcus or from the Horse Serum ointments. This would tend to support the writer's claim that the reactions observed were not non-specific foreign protein reactions but are due to sensitivity or allergy to the specific types of organisms. No reactions were obtained from the application of the various ointments to the normal skin of the forearm. This, in the writer's opinion renders the reaction even more specific, as in each of these cases, reactions occurred with specific antigens in the diseased areas only.

Another interesting fact, the significance of which shall be discussed later, is that in the 20 cases showing evidence of both focal infection and Tuberculous connections, 17 cases gave a total of 20 reactions. 10 reactions were to the Tubercle ointment, 6 to the Streptococcus Pyogenes ointment and 4 to the Mixed Streptococcus ointment. Also in 18 patients showing evidence of neither focal infection nor Tuberculosis, 16 cases showed 17 reactions to the various ointments. 5 reactions were due to the Tubercle ointment, 5 to the Streptococcus Pyogenes ointment and 7 to the Mixed Streptococcus ointment. These results are summarised and tabulated in Table 7.

The explanation for the reaction of the lesions to more than one ointment in the few cases in which this did occur, may be due to the fact that in these patients there exists a highly allergic state of the skin to various Streptococci or to both Streptococci and Tubercle Bacilli.

In addition to the reactions described above, another phenomenon was observed which although not classed as a reaction to the ointments must be included under this heading. This phenomenon was the actual healing and disappearance of the active lesions following the application of the ointments. This occurred in no less than 6 patients. In each case the change towards healing was clearly visible after only 1 weeks application. In each of the 6 patients, the healing property was confined to one ointment only and when the other ointments were used, no change took place in the lesions. On reverting to the specific ointment however, healing continued until complete.

The reason for this healing power in the ointments is difficult to determine. From the action of the ointments, it appears that the healing power is specific to the vaccine in the ointment as it is confined in each patient to one particular ointment only. This would therefore exclude the possibility of the Eucerine base being the active principal. The writer suggests the hypothesis that the curative effect of the specific ointment is due to a rapid desensitation of an allergic state in the skin by the vaccine of the organisms which originally

caused the allergy. This having been accomplished, the damaged tissues then heal by natural processes.

In 4 of the 6 cases which healed following the application of ointments (Cases 32, 50, 59 and 60), the lesions disappeared completely leaving only faint staining but no scar tissue. In the other 2 patients (Cases 11 and 55) multiple areas of diseased tissue were replaced by sound scar tissue after the use of the specific ointment for periods of only six and eight weeks respectively. Of the 6 patients, 3 were healed by the Tubercle ointment, 2 with the Mixed Streptococcus ointment and 1 with Streptococcus Pyogenes ointment.

In the 16 cases which did not react to the applications of the various ointments, the writer suggests that the reason may be due to the fact that the specific antigen causing the disease in these cases was not incorporated in any of the ointments, but as these cases were subsequently treated successfully with Sulphatriad and Mapharside, it would seem that the causal antigen was related to those used in the ointments.

It can be observed therefore that 58 patients out of a total of 74 cases of Lupus Erythematosus Discoides showed reactions after local applications of ointment. The significance of these results will be discussed later in the Thesis.

Chapter V.

TREATMENT OF CASES.

As 6 of the 74 patients healed completely with the local use of ointments, only 68 cases received internal treatment for Lupus Erythematosus Discoides. All cases were treated as outpatients and, as previously stated, an attempt was made to correlate the method of therapy used in each case with the corresponding ointment reaction. If such a reaction was not obtained, as did happen in 16 cases, the clinical findings were studied and the method of treatment was chosen according to these findings instead of by ointment reactions. Three methods of treatment were employed. The treatments were carried out by the administration of Calciferol, Sulphatriad or Mapharside.

Calciferol was chosen as a method of treatment in those patients giving a reaction to the Tubercle ointment or if this was absent, to those with definite Tuberculous connections. This method of treatment was selected in these patients because of the encouraging results which the drug had given since it was first used by Charpy (1945) in a definitely Tuberculous skin manifestation like Lupus Vulgaris. This was done despite the poor response of Lupus Erythematosus Discoides to Calciferol treatment described by McCrae (1947) and Dowling (1947). These opinions however were each formed, in the writer's own opinion,

rashly on only 1 case of the disease.

Sulphonamides were first used in the disease by Barber (1938). Since then many authorities have used the various Sulphonamide drugs, with varying results. Lindsay (1941) and later Pearson (1943) describe cases treated with Sulphonamide. Both writers stress the dangers of the compound and the frequency of untoward reactions. Lindsay (1941) is of the opinion that recurrence of the lesions often takes place on withdrawal of the drug. Sulphatriad was chosen in this instance as these tablets are prepared in order to minimise the risk of crystalluria and subsequent renal damage and hence are very suitable for treatment over prolonged periods such as is necessary in cases of Lupus Erythematosus Discoides. They were given to those patients showing a reaction to one or both of the Streptococcal ointments. If such a reaction were absent, the clinical findings in the case were investigated for evidence of focal infection. If a positive result was found, treatment was instituted. The rationale behind this method of treatment was the inhibition of organisms and destruction of their toxins to give a sensitised skin, time and opportunity to recover.

The first two methods of therapy were used as primary treatments, while Mapharside was used as a reserve method to be employed in those cases resistant to Calciferol. This arsenical preparation was chosen as a substitute for the above two methods, as

in Part 1 of this Thesis, the writer had shown that the compound had beneficial effects on cases of Lupus Erythematosus with evidence of Tuberculous connections or with signs of focal infection.

Calciferol.

In Calciferol treatment, the drug used throughout was the Glaxo preparation, High Potency Ostelin, which is dispensed in tablets each containing 50,000 I.U. of the drug. The 25 patients chosen for this method of therapy were, as stated previously, those cases giving a reaction to the Tubercle ointment or with definite Tuberculous connections. 150,000 I.U. were given daily by mouth for six weeks and then the dose was reduced to 100,000 I.U. daily for a further six weeks. If no improvement had occurred by the end of this period, treatment was stopped as it was considered that this was a sufficient length of time in which to expect a response to the drug. During the first four weeks of treatment, each patient was seen at weekly intervals. Prior to treatment, specimens of blood were collected for blood urea and serum calcium estimations. These were repeated after two weeks treatment and again after four weeks treatment. These estimations and the weekly visit of the patient were carried out to safeguard against any danger of toxic effects from the drug. When the patient was put onto the reduced dosage of 100,000 I.U. daily, blood urea and serum calcium estimations were done only at the end of the eighth and twelvth

weeks of treatment. Dowling and Thomas (1946) are of the opinion that serum calcium levels have little relationship to the toxic symptoms and in their opinions, have only to be estimated at regular intervals of one to two months to guard against hypercalcaemia and subsequent adventitious calcium deposit and renal damage. These writers' views on toxicity have been subsequently supported by Fenny, Sandiland and Franklin(1947).

Of the 25 cases treated with Calciferol, 20 showed no change in the clinical appearance of the lesions. 2 more patients (Cases 10 and 19) became definitely worse. The lesions were in these cases, erythematous, infiltrated, painful and tender and a few fresh lesions appeared. In both cases treatment was stopped within four weeks. One patient (Case 28) was completely cured without a trace of scar formation and another (Case 20) was markedly improved while the last patient (Case 43) showed only the slightest improvement in the lesions. Of the 23 unsuccessfully treated cases, 18 will be included under Mapharside treated cases, 3 under cases treated with Sulphatriad and the remaining 2 cases received treatment by other experimental methods of therapy, irrelevant to this Thesis. In the 2 patients who responded satisfactorily to treatment, the lesions of Lupus Erythematosus Discoides were associated with definite evidence of an increased sensitivity of the skin i.e. allergy, to the Tubercle Bacillus in the form of Erythema Induratum or Bazin's disease. Both patients gave a definite reaction in the lesions of Lupus

Erythematosus to the Tubercle ointment. Of the 25 patients only 3 cases (27, 46 and 52) showed any toxic symptoms from the Calciferol. These consisted of headache, nausea, and anorexia. In only one patient (Case 46) were the symptoms severe enough to stop treatment. Even 50,000 I.U. daily caused this patient to have severe headache and nausea. In none of the cases, toxic or normal, did the serum calcium or blood urea estimations show any deviation from the normal range. No defaulters occurred during the treatment of these 25 cases.

It is evident therefore, that after what might be considered a fair trial, Calciferol has little claim to recognition as a method of therapy in Lupus Erythematosus Discoides.

Sulphatriad.

In the second method of therapy, the patients were given treatment by means of Sulphatriad. These are compound Sulphonamide tablets which are produced by Messrs. May and Baker. Each tablet consists of 0.5g of a mixture containing Sulphathiazole 0.185g, Sulphadiazine 0.185g and Sulphamerazine 0.13g.

The 46 patients chosen for this treatment were, as stated previously, those showing a reaction to one or both of the Streptococcal ointments or, if such a reaction were absent, those having clinical evidence of focal infection. 3 of these 46 patients (Cases 2, 25 and 51) had been unsuccessfully treated with Calciferol, and Sulphatriad was used as a substitute. This was

done as in Cases 2 and 51, a reaction had been obtained from both Streptococcal and Tubercle ointments, while in Case 25 there had been a reaction to 1/100,000 dilution of Old Tuberculin and in addition Streptococcus Viridans had been cultured from a throat swab. Two tablets - 1G Sulphatriad - were given to the patients four times a day for alternate five day periods. Treatment was continued in this manner for four months and then an assessment of the progress of the lesions was made. If no improvement was then noticable another method of treatment was instituted. If a response was detected in the lesions, treatment was continued for a further two months. An alternate method of treatment is to gave continuously one tablet of Sulphatriad four times a day. It was hoped however that the intermittent method would lessen the risk of toxic effects and also lessen the danger of the organisms becoming drug resistant. During the first four weeks of treatment the patients were seen at the end of each five day period of taking tablets. The urine was examined for albumin and microscopically for casts and crystalluria at each visit, and on every second attendance a white blood cell count was done. For the next eight weeks, the patients were seen at fortnightly intervals and the above examinations repeated. During the final twelve weeks, examinations were done at the end of each four week period. In all cases treatment was continued for the complete period, even if clinical healing was apparent, but in these cases

the dosage was reduced to one tablet four times a day when healing was complete. This was done in the hope that the high relapse rate mentioned by Lindsay (1941) could be diminished by the continuation of the sulphonamide therapy., It must be realised that although the risk of renal complications is lessened by the use of the compound sulphonamide tablet, various other forms of untoward reactions may occur. These include drug rashes, nausea and vomiting, and blood dyscrasias. During the administration of Sulphatriad therefore, these must be borne in mind and watched for carefully. In order to reduce the incidence of crystalluria, fluid intake was increased to a maximum during the five day period in which the tablets were being taken.

Of the 46 patients treated with Sulphatriad, 21 cases responded excellently to treatment and could be classed as clinically cured while another 14 cases produced results which could be classified, according to the terms described in Part 1, as markedly improved. Of the remaining 11 cases which must be counted as failures, 8 were only slightly improved and 3 showed absolutely no change in the clinical lesions. A total of 35 (76.2%) cases therefore could be classified as giving a satisfactory response to treatment. Of the 11 unsatisfactory cases 2 patients (Cases 37 & 58) were given Mapharside therapy while the remaining 9 cases were given other experimental methods of therapy irrelevent to this work. Of all 46 patients treated, reactions to the drug

occurred in only 4 cases (30, 34, 37 and 58). In 1 of these cases (Case 30) the symptoms consisted of nausea and anoxeria for the first forty eight hours after starting to take the tablets. In spite of this complication which was distressing but not serious, the patient continued treatment with an excellent reward as the case cleared completely leaving only extremely faint scars, at the sites of the lesions. Apparent cure was noticeable after only ten weeks on treatment but as stated before, this was continued until the full period of therapy had been completed. In the remaining 3 patients (Cases 34, 37 and 58) the reactions were of a more serious nature. In one patient (Case 34) the local reaction of the patches to the drug was so severe that treatment had to be stopped during the third course of tablets. In the second patient (Case 37) a severe drug eruption occurred during the fourth course of tablets. This rapidly subsided on complete withdrawal of the drug and no other constitutional upset was detected. In the third patient (Case 58), nausea and vomiting occurred to such a degree during the administration of each course of tablets that treatment with the drug had to be abandoned during the fourth course. It is of interest to note that during the course of treatment, neither blood dyscrasias nor renal complications occurred. A peculiar reaction observed in many patients during treatment with Sulphatriad, was an apparent exascerbation of the lesions while the tablets of the drug were being taken. These

exascerbations took place in both the erythematous and seborrhoeic types of the disease. During the first few courses of tablets the reactions were very intense, but as the treatment progressed they gradually lessened. The same phenomenom was observed, but to a lesser degree with a few cases treated with Mapharside, in Part 1, and has been reported also, by writers, as occurring after gold injections. The writer is of the opinion that these exascerbations are forms of Jarisch-Herxheimer reactions, as in the latter, the reaction also becomes gradually less with subsequent treatment. These may be caused by destruction of organisms by Sulphatriad tablets and the liberation of excessive toxins or antigens.

In the 46 cases there were only 2 defaulters. One patient (Case 7) did not report for observation after the fourth course of tablets. The second case (No. 66) defaulted after the sixteenth week and in this patient, only the slightest improvement had taken place in the lesions.

Mapharside.

As previously stated, Mapharside was used only as a reserve method of treatment in cases resistent to the other two methods of therapy., The drug was given by weekly intravenous injections of 0.06g as described in Partl of this Thesis. 20 cases were treated by this method and of this number, 18 cases had been resistant to Calciferol. After Mapharside therapy 8 of these cases were clinically cured, 5 markedly improved and only 5 could

be described as failures to treatment with Mapharside injections. Of the 2 patients resistant to Sulphatriad, 1 case was markedly improved and the other only slightly improved after Mapharside therapy. These 2 cases will be described only under statistics for Sulphatriad therapy, as cases which did not respond to this latter method of treatment.

Of the 18 Calciferol resistant cases, 1 patient (Case 23) defaulted at the end of the first course of treatment with Mapharside and in another patient (Case 74), injections were stopped after five had been given as the patient experienced very severe vomiting and headache for twenty four hours after each injection and was incapacitated for work.

Tables 8 and 9 will now be given. In Table 8 the results and toxic reactions of the various methods of treatment are summarised while in Table 9, the reactions of the cases to the ointments and the results of therapy are tabulated.

Of the 68 cases receiving the various methods of treatment, it is the final results which are important as the Calciferol was entirely experimental. The results of this type of treatment therefore can be ignored for statistical purposes, as the drug has been shown to be a failure as a therapeutic agent in the treatment of Lupus Erythematosus Discoides. In place of these results, the results of Mapharside or Sulphatriad treatment in these cases previously given Calciferol, will be used for statistics.

TABLE 8.

Treatment	Cases	Results of Treatment					Reactions	Defaulters
		Clinically Cured	Markedly Improved	Slightly Improved	No Change	Worse		
Calcifgrol	25	1	1	1	20	2	3	—
Sulphatriad	46	21	14	8	3	—	4	2
Mapharside after Calciferol	18	8	5	3	2	—	1	1
Mapharside after Sulphatriad	2	—	1	1	—	—	—	—

TABLE 9.

Cases	Ointment Reactions			Treatment	Result
	Mixed Streptococcus	Streptococcus Pyogenes	Tubercle		
1	—	Slight	—	Sulphatriad	Cured
2	—	Definite	Slight	Calciferol Mapharside	No Change Mark. Impv.
3	—	—	Definite	Calciferol	No Change
4	—	—	Definite	Calciferol	No Change
5	—	—	—	Sulphatriad	Cured
6	Slight	—	—	Sulphatriad	No Change
7	—	—	—	Sulphatriad	Slightly Impv.
8	Definite	—	—	Sulphatriad	Cured
9	—	—	—	Calciferol Mapharside	No Change Mark Impv.
10	—	—	Definite	Calciferol Mapharside	Worse Mark. Impv
11	—	—	HEALED	—	—
12	—	—	—	Sulphatriad	Mark. Impv
13	—	—	Slight	Calciferol Mapharside	No Change No Change
14	—	Slight	Definite	Calciferol Mapharside	No Change Cured
15	Definite	—	—	Sulphatriad	Mark. Impv.
16	Slight	—	—	Sulphatriad	Cured
17	—	—	—	Sulphatriad	Slightly Impv.

Cases	Mixed Streptococcus	Streptococcus Pyogenes	Tubercle	Treatment	Result
18	—	Definite	—	Sulphatriad	Cured
19	—	—	Definite	Calciferol Mapharside	Worse Mark. Impru.
20	—	—	Definite	Calciferol	Mark. Impru.
21	—	Definite	—	Sulphatriad	Cured
22	—	Definite	—	Sulphatriad	Mark. Impru.
23	—	—	Slight	Calciferol Mapharside	No Change Slightly Impru.
24	—	Definite	—	Sulphatriad	Mark. Impru.
25	—	—	—	Calciferol Sulphatriad	No Change Cured
26	Definite	—	—	Sulphatriad	Slightly Improv.
27	—	—	Definite	Calciferol Mapharside	No Change Cured
28	—	—	Definite	Calciferol	Cured
29	—	—	—	Calciferol Mapharside	No Change Cured
30	Definite	—	—	Sulphatriad	Cured
31	Slight	Definite	—	Sulphatriad	Mark. Impru
32	HEALED	—	—	—	—
33	—	—	Definite	Calciferol Mapharside	No Change Cured
34	Definite	—	—	Sulphatriad	Slightly Improv.
35	—	—	—	Sulphatriad	Cured
36	—	—	Definite	Calciferol Mapharside	No Change Cured

Cases	Mixed Streptococcus	Streptococcus Pyogenes	Tubercle	Treatment	Result
37	—	—	—	Sulphatriad Mapharside	Slightly Impr. Slightly Impr.
38	Definite	—	—	Sulphatriad	Mark. Impr.
39	—	Slight	—	Sulphatriad	Cured
40	—	—	Slight	Calciferol Mapharside	No Change Mark. Impr.
41	—	—	—	Sulphatriad	Cured
42	—	Slight	—	Sulphatriad	Cured
43	—	—	Definite	Calciferol Mapharside	Slightly Impr. Mark. Impr.
44	—	Slight	—	Sulphatriad	Mark. Impr.
45	—	Definite	—	Sulphatriad	Mark. Impr.
46	—	—	—	Calciferol Mapharside	No Change No Change
47	—	—	Definite	Calciferol Mapharside	No Change Slightly Impr.
48	Definite	—	—	Sulphatriad	Cured
49	—	Definite	—	Sulphatriad	Mark. Impr.
50	—	—	HEALED	—	—
51	Slight	—	Slight	Calciferol Mapharside	No Change Mark. Impr.
52	—	—	Definite	Calciferol Mapharside	No Change Cured
53	Definite	—	—	Sulphatriad	Cured
54	—	Definite	—	Sulphatriad	Mark. Impr.
55	HEALED	—	—	—	—
56	—	Slight	—	Sulphatriad	Mark. Impr.

Cases	Mixed Streptococcus	Streptococcus Pyogenes	Tubercle	Treatment	Result
57	—	Definite	—	Sulphatriad	Slightly Improv.
58	—	—	—	Sulphatriad Mapharside	Slightly Improv. Mark. Improv.
59	—	—	HEALED	—	—
60	—	HEALED	—	—	—
61	—	Definite	—	Sulphatriad	Cured
62	—	—	—	Sulphatriad	Slightly Improv.
63	—	Definite	—	Sulphatriad	Mark. Improv.
64	Slight	—	—	Sulphatriad	Cured
65	—	Slight	—	Sulphatriad	Mark. Improv.
66	—	—	—	Sulphatriad	Slightly Improv.
67	—	Definite	—	Sulphatriad	Cured
68	Definite	—	—	Sulphatriad	Cured
69	—	—	Slight	Calciferol Mapharside	No Change Cured
70	—	—	—	Sulphatriad	Cured
71	—	—	Slight	Calciferol Mapharside	No Change Cured
72	—	—	—	Sulphatriad	No Change.
73	—	Definite	—	Sulphatriad	Cured
74	—	—	Slight	Calciferol Mapharside	No Change Slightly Improv.

4 patients (Cases 3, 4, 20 and 28) of the 68 patients treated by internal medicaments received only Calciferol therapy and will be ignored for the final results. The remaining 64 patients received treatment with Sulphatriad or Mapharside. 46 patients had treatment with Sulphatriad and 18 patients with Mapharside. Of the 46 Sulphatriad patients, 21 could be classified as clinically cured and 14 cases as markedly improved. The remaining 11 cases must be considered failures. This gives a total satisfactory response rate of 35 (76.2%) cases. Of the 18 patients treated with Mapharside, 8 were clinically cured, 5 markedly improved and 5 failed to respond to the arsenical injections. A satisfactory response to treatment was thus produced in 13 (72.1%) cases. Of the total 64 cases treated therefore, 29 patients could be classed as clinically cured and 19 patients as markedly improved thus giving the high satisfactory response rate of 48 (75%) cases. The remaining 16 (25%) cases must be considered as failures to treatment.

At this stage it may be advantageous to describe the outcome of treatment in the 22 cases resistant to methods of therapy other than those described in this part of the Thesis. 14 of these patients were included in the 46 receiving treatment with Sulphatriad. Of these 14 cases, 8 had previously been given Mapharside injections (Part (1),) 4 had had previous Bismuth injections and the remaining 2 had received very irregular treatment

with Sulphathiazole. On Sulphatriad, these 14 patients gave the following results:- Cured 6, markedly improved 5, failures 3. An interesting point is that of these 11 satisfactory cases, no fewer than 10 gave a positive reaction to one or both of the Streptococcal ointments.

7 of these previously treated 22 patients, were included in the 18 cases given Mapharside and of these 7 cases, 5 had been treated with various Sulphonamide preparations, 1 had had bismuth injections and 1 had received Mapharside therapy. These 7 patients gave the following results:- Cured 3, markedly improved 2, failures 2. Again it is noteworthy that in the 5 satisfactory cases, 3 gave a reaction to the Tubercle ointment.

The last of these 22 cases which had been resistant to previous treatment had received Mapharside injections with no result. This patient was now given Calciferol but with no effect on the lesions.

The final result of these 22 patients is therefore:- clinically cured 9, markedly improved 7 and failures 6. This gives a total response of 16 (72.7%) cases with satisfactory results to preselected methods of treatment.

Relapses.

Subsequent observation after cessation of treatment was carried out every two to three months in the 48 cases which responded satisfactorily to treatment with Sulphatriad and Mapharside, and also in the 2 patients who gave a good response to Calciferol

therapy. This was done to determine the permanency of the results of treatment. This period of observation has now lasted between nine and twenty months. In this time 4 patients have relapsed, 2 of which (Cases 45 and 68) had been treated with Sulphatriad and the other 2 patients (Cases 19 and 40) with Mapharside. In cases 68 and 45 relapse of the lesions occurred within five months of the cessation of treatment while in cases 19 and 40 recurrence of the disease took place six and eight months respectively after cessation of treatment. In 3 of these patients, further treatment produced excellent results but in case 40, although twelve more injections of Mapharside were given, there was no further change in the lesions. It is to be noted that all recurrences of the disease took place within eight months of the cessation of treatment. None of the relapses was occasioned by any special factor such as exposure to strong sunlight or excessive worry, which, according to Calloway and Stokes (1938) and later Beerman and Stokes (1944), may be important factors in the production of a recurrence of the disease. These results lend support to the writer's views expressed in the first part of this Thesis, namely that recurrence is most liable to occur during the first year after cessation of treatment. Two more patients, originally classified as clinically cured (Cases21 and 53) defaulted after only twelve months of observation. At that time the lesions were unchanged and could still be classified as

cured.

Therefore after nine to twenty months of observation, the final figures for treatment are, 28 cases clinically cured and 16 cases markedly improved, thus giving a still highly satisfactory total of 44 (68.7%) cases responding well to treatment.

Chapter VI.

DISCUSSION.

Dyson (1925) in a series of 46 cases of Lupus Erythematosus Discoides attempted to clarify the cause of the disease, by the application of an ointment containing Old Tuberculin, to patches of the disease and noting the reactions of these patches to the ointment. Although his results were interesting, they lacked decisiveness due to the ommission of proper control ointments and experiments. As stated previously, Forman (1930) in 21 cases of the disease used intradermal injections of vaccines prepared from various Streptococci and Staphylococci. Although using different methods, both authorities were using the same principal, namely an endeavour to prove skin sensitivity to a specific antigen which they considered to be some variety of bacterial toxin. Both writers were attempting by this specific sensitivity, to prove a definite cause of the disease, in individual cases. It should be noted however that Forman qualified his positive results by stating that it may be the organism or the toxin or a state of allergy to one or other of these, which is the exact cause of the disease.

The writer was of the opinion that although a little could be added to the vast store of knowledge on the causation of the disease by the method of properly controlled ointment reactions, much more could be done for this disease by correlating these

reactions with more specific methods of therapy and thus increasing the final number of satisfactory responses to treatment. It has been stated by various writers that, in the absence of definite pathological evidence connecting a disease with its cause, it would be necessary to obtain the strongest possible therapeutic evidence to establish a relationship between cause and disease. Conversely, accepting the fact that Lupus Erythematosus Discoides has been proved in the foregoing part of this Thesis to be closely associated with the organisms of focal sepsis and the Tubercle Bacillus, the writer used methods of treatment recognised as combating these causative factors. By correlating the chosen method of therapy with specific ointment reactions and clinical findings in the individual cases, it was hoped to be able to increase the number of satisfactory results to treatment.

As previously described, five varieties of ointments were used . The Horse Serum ointment was used strictly as a control application and no reactions developed from this ointment. Neither were reactions present from the Staphylococcus ointment. This was contrary to the writer's expectations, as in many cases of focal sepsis, pathogenic Staphylococci are often found. In addition, Burky and Hopkins (1936) using intradermal tests with Staphylococci, proved that 66% of a small series of cases of Lupus Erythematosus Discoides showed skin sensitivity to these organisms. It would seem therefore that in the present series of Lupus

Erythematosus Discoides, the staphylococci are not organisms of importance in producing a specific sensitising antigen which might be the cause of the disease. In all, 56 reactions in 52 patients and of these reactions, 35 were caused by Streptococcal ointments and 21 by the Tubercle ointment. From the evidence it would appear that the reactions are specific to the organisms, as the control ointments gave negative results. No reactions were obtained from the normal skin. This fact, in the writer's opinion, enhances the value of the ointments and makes them as useful as the Mantoux and other intradermal tests.

From Table 6 it can be seen that of the 35 Streptococcal reactions, 21 occurred with Streptococcus Pyogenes and 14 with Mixed Streptococci. This indicates that although the main organism appears to be a Haemolytic Streptococcus, other Streptococci may be of importance in the production of the disease. This is of interest when it is remembered that a large number of throat swabs, forty from seventy four patients, showed evidence of Streptococcus Viridans on culture. Sulphatriad however, is equally efficacious as a method of treatment in both groups of reactions.

Mantoux tests and Ointment reactions.

If an attempt is now made to correlate the sensitivity of the skin, as judged by the dilution titre of the Mantoux reactions with that formed from the ointment reactions, it will be observed that in the 15 patients reacting to 1/100,000 dilution of Old

Tuberculin, no less than 11 reacted to the Tubercle ointment and 2 were healed by it. Of the 2 cases who did not react to the Tubercle ointment, 1 was cured by Sulphatriad and the other by Mapharside.

On the other hand, of the 37 patients in Part 11 of the Thesis who reacted to a dilution of 1/10,000 Old Tuberculin, only 8 cases reacted to the Tubercle ointment. Three cases reacted to both Tubercle and Streptococcal ointments, 7 to none of the ointments and no less than 19 reacted to the Streptococcal ointments. Of these 19 cases, 16 showed a satisfactory response to treatment with Sulphatriad. This would seem to show that in dilutions higher than normally used, namely greater than 1/10,000, the Mantoux reactions and ointment reactions indicate, with equal accuracy, the sensitivity of the skin, but when Old Tuberculin is used as in the Mantoux test in dilutions below $\frac{1}{100,000}$, it loses a considerable degree of its accuracy in indicating the sensitivity of the skin and the probable specific antigen producing the lesions of Lupus Erythematosus Discoides. Thus more reliance should be placed on ointment reactions as a method of indicating the probable antigen and hence the type of treatment to be employed.

Clinical Lesions and Ointment Reactions.

A comparison between the clinical type of the lesions and the ointment reactions in the same patient showed that in these cases described as Seborrhoeic, there is a slight preponderance of reactions to the Tubercle ointment. In 30 Seborrhoeic cases

27 reactions were obtained and of this number 17 were caused by the Tubercle ointment. Although this suggests that the Seborrhoeic type of lesion has a tendency to be of Tuberculous origin, the percentage of reactions to the Tubercle ointment is by no means decisive enough to allow such a conclusion to be drawn. It must be noted however that Barber (1930) once stated that he was of the opinion that the exact cause of the disease could be determined by the clinical appearance of the lesions in almost every case. The writer does not agree with this statement, In only 1 patient (Case 1) does the ointment reaction appear to contradict the clinical findings in the case. There is definite evidence in this patient of old healed Pulmonary Tuberculosis and no signs of focal infection within the mouth, nose or throat. On the application of ointments however, a reaction was obtained from the lesions of the disease by the Streptococcus Pyogenes ointment. This may be due to the fact that the focus of infection was in the bowel, or more probably, as Forman (1930) stated, a condition of sensitivity to Streptococci may exist without any gross or obvious septic foci being apparent. So this case would appear to be an indication that a very careful search must be made for focal infection and is also a point in favour of the use of ointments as a method of determining the type of treatment to be used in any individual patient.

Ointment Reactions and Treatment

The reasons for the choice of Sulphatriad and Calciferol as the two primary methods of treatment have been explained previously.

However, three months after commencement of Calciferol therapy it was decided that this treatment was of no value in Lupus Erythematosus Discoides, and in place of this drug, injections of Mapharside were given as described. Therefore the results of therapy with Sulphatriad and Mapharside give a true picture of the response which can be expected from treatment. As stated before, a total of 64 cases was treated by these methods and a high satisfactory response rate of 75% was obtained. The results using the same two methods of treatment in the 48 patients who reacted to the various ointments will now be studied and the remaining 16 patients from the total of 64 will be excluded as they did not react to ointment application and were treated on evidence from clinical findings alone.

Of these 48 cases reacting to the ointments, no less than 22 were clinically cured and another 18 markedly improved, thus giving an even greater satisfactory response rate of 40 (81.1%) cases. The remaining 8 cases must be classed as failures. Such a result in Lupus Erythematosus Discoides is considered by the writer to be very good, and although it is tempting to quote the higher percentage figure as the outcome of the correlation of ointment applications and selected methods of therapy, this must not be done. The slightly lower figure of seventy five percent must be regarded as the true result of this preselection method of treatment as the 16 cases, although not responding to ointment application, were nevertheless tested by this method. It must

not be forgotten however, that in addition to the 40 cases which responded well to Sulphatriad and Mapharside treatment, there were 6 more patients from the original total of 74 patients who healed completely with applications of ointment alone. The final total of 46 cases therefore from a total of 74 cases, gives a percentage of 77.1% which is slightly higher than the results from treatment with Sulphatriad and Mapharside.

Is it possible to gain similarly successful results by basing the method of therapy on clinical findings alone? As was observed from the history and clinical investigations in this series of Lupus Erythematosus Discoides, some patients had evidence of both focal infection and Tuberculosis and other patients had no evidence of either. There is an obvious difficulty therefore in treating these types of cases of the disease by basing methods of treatment entirely on clinical findings. It is in these patients that the use of ointments to obtain guiding reactions is of considerable importance. It has been shown in a previous chapter that of the total cases, 20 had evidence of both focal infection and Tuberculosis, and 18 had evidence of neither. Of these 38 patients, 33 gave a total of 37 reactions, 15 of which were caused by the Tubercle ointment, 11 by the Streptococcus Pyogenes ointment and 11 by the Mixed Streptococcus ointment. Treatment of these 33 patients with Sulphatriad and Mapharside yielded a high satisfactory response of 25 (75.7%) cases.

Of the 20 cases who had evidence of both focal infection and Tuberculosis 2 patients (Cases 59 and 60) healed completely after the application of Tubercle and Mixed Streptococcal ointment respectively. It is the writer's opinion therefore, that in the abovementioned 38 patients, where empirical treatment would have been necessary because of the difficulty in separating the causal organism of the disease from the clinical findings in the case, ointment applications have justified their use and have produced excellent results from treatment.

Comparison of Treatments in Part 1 and Part 11.

The results of empirical Mapharside treatment as was done in Part 1 of the Thesis can now be compared with the results of the more specific methods of therapy used in the present series of patients. It is observed from this comparison that the percentage of satisfactory responses has risen from 66.2% to 75%. If the reason for this increase is sought, it can be explained solely by the increase in the curative rate of the treatments which is 20 (35.8%) cases with Mapharside alone but is 29 (45.3%) cases with the preselected methods. If a similar comparison is made between the results of the Royal Infirmary cases empirically treated with gold and bismuth, and those treated by the methods chosen by ointment reactions, an increase in satisfactory results by the latter is again noted. As with Mapharside this gain is almost entirely due to an

TABLE 10

METHOD OF TREATMENT	CASES	CLINICALLY CURED	MARKEDLY IMPROVED	SATISFACTORY RESULTS
MAPHARSIDE	56	20 (35·8%)	17 (30·4%)	66·2%
BISMUTH	30	12 (40%)	8 (26·7%)	66·7%
GOLD	61	21 (34·4%)	13 (21·3%)	55·7%
PRESENT SERIES OF CASES	64	29 (45·3%)	19 (29·7%)	75%

increase in the percentage of clinical cures although in a comparison with gold, the percentage of cases markedly improved is also increased. These figures are summarised in Table 10.

From Table 10 it can be seen that by the use of ointments and the correlation of the reactions obtained therefrom, with selected methods of treatment, a higher percentage of good results to treatment can be expected than by using empirical methods of therapy. This increase in satisfactory results seems to vindicate the loss of a few weeks at the commencement of treatment by ointment applications and is sufficiently good reason for the inclusion of the ointments as a primary method of investigation of cases of Lupus Erythematosus Discoides.

In Part 1 of this Thesis it was observed that Mapharside had produced a good response to treatment in 5 of the 8 cases which had proved resistant to Sulphonamide therapy. It should be noted however that of these 5 cases successfully treated with Mapharside, 3 had evidence of Tuberculous connections.

Although the ointment reactions did on one occasion contradict the clinical findings, it would seem reasonable that in these 3 cases with evidence of Tuberculous connections, a reaction to the Tubercle ointment could have been expected. So by pre-selection methods Sulphonamides would not have been used. In addition to these cases in Part 1 of this Thesis, 7 patients (Cases 9, 14, 29, 30, 36, 43 and 68) in the present series had received previous Sulphonamide therapy with little effect.

On investigation of these cases, 3 patients (Cases 14, 36 and 43) reacted to the Tubercle ointment and another 2 (Cases 9 and 29) had definite evidence of Tuberculous connections. When these 5 cases were subsequently treated with Mapharside, 3 (Cases 14, 29 and 36) were clinically cured and 2 (Cases 9 and 43) were markedly improved. In the remaining 2 of the 7 patients mentioned before, who had been resistant to Sulphonamide therapy, a definite reaction was obtained in each case with Mixed Streptococcal ointment. In both cases, intense Sulphatriad treatment produced a clinical cure. This seems to indicate that in the treatment of Lupus Erythematosus Discoides with Sulphonamides, the drug must be given regularly and the treatment must be persistant and not administered in a haphazard manner as was done previously in the case of these two patients.

On the other hand however, in the series investigated in Part 11 of this Thesis, there were 10 cases who had previously received treatment with Mapharside with little or no effect. Of these 10 cases, no less than 6 reacted to one or other of the Streptococcal ointments and on treatment with Sulphatriad, 2 cases were clinically cured and 4 cases markedly improved. These results therefore, and the failure of Sulphonamide therapy in the cases which later responded to Mapharside treatment in both the first and second series, appear to be another argument in favour of preselecting the method of treatment to be used, by means of ointment reactions.

Treatment effect on Blood sedimentation rate.

Although it has been claimed that the blood sedimentation rate in Lupus Erythematosus Discoides is a simple but reliable method of indicating the prognosis of the disease, this can be confirmed by repeated sedimentation rates being done during the course of treatment and by careful observation of their fluctuation with the progress of the disease. In a few cases the erythrocyte sedimentation rate was estimated when a reaction in the lesions was obtained from ointment application. It was found from the 15 cases observed that in each reaction, the sedimentation rate had been slightly raised. In one patient (Case 10) however a very severe reaction occurred after application of Tubercle ointment and the erythrocyte sedimentation rate in this case rose from 14 millimetres in one hour to 58 millimetres in one hour. A clinical description of this case may now be given with advantage:-

Case 10 W.O. M. 38 years.
7/6/47.

Patient has scattered areas of Lupus Erythematosus Discoides on the forehead, both cheeks, chin and lobes of ears. These varied in size and shape but were typically seborrhoeic, with depressed centres covered with heavy, yellow adherent scales. The borders were infiltrated and of a dull cyanotic erythematous colour
Duration 8 years.

Previous History. Childhood ailments only.

Family history. Nil

Previous Treatment. Nil.

Examination. Patient had no evidence of focal infection or Tuberculosis. White Blood counts all within normal limits.
Mantoux reaction = 1/100,000 positive.

Examination contd. B.S.R. = 14 m.m. 1st hour
W.R. = Negative.

Ointment. Very definite reaction to Tubercle ointment. Patches on forehead became very erythematous. Centres were discharging serum and were crusted. Border was almost cord-like on palpation. At the same time other areas became very erythematous. Skin of forearm showed no change.
B.S.R. = 58 m.m. in 1 hour.
96 m.m. in 2nd hour.

Treatment. Calciferol 150,000 I.U. daily.
Mapharside 1200mgm.

Progress. Calciferol therapy was stopped after the fourth week as the disease had definitely deteriorated. Fresh erythematous lesions had appeared in the forehead and chin and original lesions on the forehead were weeping slightly. B.S.R. = 82mm. Mapharside was then given with excellent response. After eight weeks the lesions were much better B.S.R. was 18 m.m. in 1 hr. On completion of first course, many of the lesions on the forehead and chin were starting to scar. The fresh lesions had disappeared. On completion of second course of Mapharside, all activity had ceased and lesions on forehead, chin and ears were completely replaced by sound scar tissue. Cheeks showed slightly dilated follicles.

Result. Markedly improved.
20/2/48.
Observation. Eighteen months observation revealed no change in the condition.

During treatment the erythrocyte sedimentation rate was estimated after the eighth week and again at the end of the course of treatment. It was obvious from these findings that as the lesions improved, the blood sedimentation rates gradually decreased and

finally in the 48 patients which could ba classed as satisfactory responses to treatment with Sulphatriad and Mapharside, only 6 patients had a sedimentation rate of over 10 m.m. in one hour, whereas before treatment no less than 38 of these cases had abnormally high sedimentation rates. In addition, in these 6 cases the final sedimentation rate was never greater than 12 m.m. in the first hour and was always much lower than the original rate. In the writer's opinion therefore, these figures substantiate the claim that the blood sedimentation rate is a valuable prognostic test in Lupus Erythematosus Discoides. In addition it would appear that this test could form a method of estimating the efficiency of varieties of treatment. The figures are summarised in Table 11.

Although it was stated in Part 1 of the Thesis that the shorter the duration of the disease, the better the chance of cure, the writer considers that the combination of clinical lesion and erythrocyte sedimentation rate is a much more reliable guide to the prognosis of the disease. This statement appears to be substantiated by the fact that in 7 of the 16 cases which did not respond to treatment, the disease had been present for three years or less and so, according to many authorities, the prognosis should have been good. By the blood sedimentation rate however, no less than 4 of these unsatisfactory cases (6, 13, 37 and 62) had a poor prognosis and 1 (Case 72) only a fair prognosis.

TABLE II.

Case	BLOOD SEDIMENTATION RATE millimetres in one hour			Result of Treatment
	Before Treatment	8th Week of Treatment	End of Treatment	
1	14	10	4	Cured
2	24	18	12	Mark. Improv.
5	6	3	3	Cured
8	24	16	6	Cured
9	7	7	4	Mark. Improv.
10	14	18	8	Mark. Improv
11	24	—	5	Healed with Ointment
12	15	10	6	Mark. Improv
14	17	12	6	Cured
15	15	12	8	Mark. Improv
16	3	4	2	Cured
18	5	3	3	Cured
19	17	12	8	Mark. Improv.
20	25	12	7	Mark. Improv.
21	5	2	3	Cured
22	15	13	9	Mark Improv.
24	26	19	8	Mark. Improv.
25	18	12	4	Cured
27	21	18	7	Cured
28	16	6	4	Cured
29	26	12	4	Cured
30	18	7	4	Cured
31	6	4	4	Mark. Improv.
32	5	—	4	Healed with Ointment
33	16	14	5	Cured
35	15	10	3	Cured
36	12	9	5	Cured

Case	BLOOD SEDIMENTATION RATE millimetres in one hour			Result of Treatment
	Before Treatment	8th Week of Treatment	End of Treatment	
38	26	20	12	Mark Improv.
39	17	10	6	Cured
40	24	20	11	Mark Improv.
41	17	12	3	Cured
42	8	8	2	Cured
43	20	12	8	Mark Improv
44	17	14	8	Mark Improv
45	20	18	11	Mark Improv
48	23	20	5	Cured
49	10	8	8	Mark Improv.
50	15	—	4	Healed with Ointment
51	12	10	4	Mark Improv
52	15	9	2	Cured
53	6	4	4	Cured
54	18	14	8	Mark Improv
55	12	—	4	Healed with Ointment
56	32	18	12	Mark Improv
58	7	4	6	Mark Improv
59	28	—	6	Healed with Ointment
60	16	—	5	Healed with Ointment
61	17	9	2	Cured
63	32	24	10	Mark Improv.
64	28	13	3	Cured
65	25	20	12	Mark Improv.
67	21	12	5	Cured
68	28	16	10	Cured
69	6	6	3	Cured
70	25	12	2	Cured
71	18	18	7	Cured
73	24	11	5	Cured

Chapter Vll.

CONCLUSIONS.

Seventy four cases of Lupus Erythematosus Discoides have been investigated and treated by methods of therapy determined by the reactions of the lesions to various ointments or failing such a reaction, by clinical findings.

It would appear from clinical investigations that the organisms of focal sepsis and the Tubercle Bacillus are closely connected in some manner with the production of the disease. Direct culture and examination of pieces of diseased tissue and innoculation of these into guinea pigs yielded completely negative results. The disease would seem to be an allergic manifestation with certain predisposing factors. During the investigation of the patients, it was proved that the blood sedimentation rate was a simple but reliable guide as to the state of activity of the lesions and when considered in conjunction with the clinical type of lesion, also provided a method of determining an early prognosis in these cases of Lupus Erythematosus Discoides. It was also shown that white blood cell investigation was non-informative, either before or during treatment of the disease, and that contrary to the observations of other authorities, a leucopaenia was not a characteristic clinical feature of Lupus Erythematosus Discoides.

Local application of Streptococcal and Tubercle ointment

to lesions of the disease resulted in 56 reactions occurring in 52 patients out of a total of 74 cases of Lupus Erythematosus Discoides. These reactions were peculiar to the individual ointments and also to the patients to whom these ointments were applied, as in each case control experiments were done with negative results. These findings support the allergic theory of origin of the disease. It was shown that Mantoux reactions have little place in determining the cause of the disease. Once again, contrary to the opinion of certain authorities, it is the writer's view, that the differentation of causes of Lupus Erythematosus Discoides cannot be made on the clinical appearance of the lesions alone.

It was proved that Calciferol had no place in the treatment of Lupus Erythematosus Discoides. By correlating the reactions from ointment application with selection of treatment, an indication was given that Sulphatriad and Mapharside when used in this manner definitely increased the percentage of satisfactory results to treatment and thus the time delay at the beginning of treatment due to ointment investigation was vindicated. This delay was again justified by the good results obtained from treating patients previously resistant to empirical methods of therapy and also by selecting treatment and providing a very high rate of satisfactory responses in cases in which such preselection of treatment on clinical findings alone, would have been difficult

or impossible.

A method of choosing treatments by ointment reactions and a test, the blood sedimentation rate, to show the efficiency of the treatments, has been suggested and in conclusion it may be stated that in this part of the Thesis, an argument has been advanced for the abandonment of empirical treatment of Lupus Erythematosus Discoides and its substitution by individually selected methods of therapy.

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APPENDIX.

PART I.

APPENDIX I.

In the subsequent pages, a detailed account of the 56 cases tabulated in Table 1 and treated with Mapharside will be given. Before this description of the cases is given, the following abbreviations must be explained as they are used throughout the text of the appendix:-

P.C.	Present Condition.
P.H.	Previous History.
F.H.	Family History.
P.T.	Previous Treatment.
O.I.	Other Investigations (This includes X-ray of chest, sinuses and teeth if necessary. W.R. and urinary examination).
T.	Treatment.
P.	Progress.
Result	Result of treatment.
S.O.	Subsequent Observation.

Case 1. W.O. M. 31years.

P.C. 8/2/46 Typical patches of discoid Lupus Erythematosus were present on the nose, both cheeks and lobes of ears. The patches were dull red in colour and on the cheeks, there was considerable silver scaling. The follicles were dilated with considerable keratotic plugging. The edges of the areas were infiltrated and hard. Duration: six years.

P.H. Mumps and chicken pox during childhood.

F.H. Nil

P.T. 40 injections Bismuth Metal during 1940 and 1941.

O.I. Showed no abnormalities.

T. 800mgms Mapharside.

P. On completion of treatment, lobes of ears and nose showed complete and definite scarring. On the cheeks, the erythema was minimal, and the border was no longer infiltrated. Follicles however were still dilated. After first injection, there was a focal reaction in the areas. The lesions became very erythematous, hot and itchy. This disappeared in 24 hours. There was no constitutional upset. This focal reaction recurred to a lessening degree after the next three injections and then finally ceased to occur.

Result. 18/7/46 Markedly Improved.

S.O. No change was evident in the lesions after thirty two months observation.

Case 2. C.O. F 32 years.

P.C. 8/2/46. A typical "Batswing" area of Lupus Erythematosus Discoides was present. This was covered with heavy, greasy, yellow adherent scales. The borders were raised and hard. The left ear was also involved on lobe and rim. These areas were indurated and showed telangiectasis. Scaling was slight.

Case 2.(Contd.)

Duration: Two years.

P.H. Measles and whooping cough in childhood.

F.H. Nil

P.T. Nil

O.I. X-ray showed slight evidence of infection in right antrum.

T. 800mgms Mapharside.

P. On completion of the first course of treatment, all scaling had gone from nose, and borders of "Batswing" area were not palpable. At the end of the second course of treatment, the "Batswing" lesion had completely disappeared. The lobe of the left ear however still showed telangiectasia and no scarring was evident.

Result 18/7/46. Markedly Improved.

S.O. No change was observed in the lesions thirty two months after cessation of treatment.

Case 3. E.L. F. 40 years.

P.C. 8/2/46. Typical patches of Lupus Erythematosus Discoides on the nose and other three small areas on the forehead. All lesions were very erythematous and covered with heavy yellow scales. Borders of patches were definitely raised and infiltrated
General nutrition of patient poor
Duration : Three years.

P.H. Pneumonia aged twenty years.

F.H. Nil.

P.T. Nil.

O.I. Nil.

T. 370 mgms Mapharside.

Case 3. (Contd.)

P. After eight injections, erythema had definitely diminished but patient developed an albuminuria. This disappeared with four weeks rest in bed and cessation of arsenical treatment. After weekly injections of 0.02gm and 0.03gm Mapharside however, the albuminuria reappeared and was accompanied by a few epithelial casts. Mapharside therapy was suspended indefinitely.

Result.
9/5/46. Slightly improved.

S.O. Renal investigations after 18 months, revealed no abnormalities. No further arsenic however was administered.

Case 4. M.G. F 45 years.

P.C.
8/2/46. A single lesion one inch in diameter was present on the bridge of the nose. Patch was dull red in colour, the borders were elevated and hard and the follicles were dilated and plugged. Scaling was not heavy.
Duration: Five years.

P.H. Measles and Mumps aged seven years.

F.H. Nil.

P.T. 10 injections Lopion 1942.

O.I. Showed no abnormalities.

T. 800mgms Mapharside.

P: On completion of treatment, scar tissue involved almost two thirds of patch. Remaining third showed no clinical activity. After first injection of Mapharside, the lesion became bright red in colour and itchy. This recurred after the next four injections then gradually lessened and disappeared. No constitutional upset was present at any time.

Result
18/7/46 Markedly Improved.

S.O. No clinical activity was present 32 months after cessation of treatment.

Case 5. E.F. F. 20 years.

P.C. 15/2/46 Small areas were present on nose and both cheeks. All were very erythematous and showed dilatation of follicles, induration of borders and almost complete absence of scaling. Areas were approximately size of a sixpenny piece.
Duration: Four years.

P.H. Scarlet fever, measles and mumps in childhood.

F.H. Two brothers, one sister alive and well.

P.T. Nil.

O.I. No abnormalties.

T. 720mgms Mapharside.

P. Erythema in lesions was soon reduced. There was a gradual disappearance in lesions without scar formation except for a very small area on the nose. The second course of treatment was stopped at the patient's request, after 8 injections, as all trace of the lesions had disappeared.

Result 11/7/46. Cured.

S.O. There was no sign of recurrence of the lesions 33 months after treatment had ceased.

Case 6. C.D. F. 36 years.

P.C. 15/2/46 A small area of Lupus Erythematosus Discoides was present on bridge of nose with another larger area on vertex of the scalp. Nose showed marked erythema and only slight infiltration of the edges. Scalp lesion was one and a half inches in diameter, scarred in the centre and covered over the whole area with telangiectases. Follicles were greatly dilated and scaling was absent.
Duration: Ten years.

P.H. Childhood ailments only. Quinsy aged twenty and twenty four years.

F.H. Nil

P.T. Nil

Case 6 (Contd.)

O.I. Revealed no abnormalities.

T. 800mgms Mapharside.

P. After two complete courses of Mapharside, the lesions showed practically no change in their clinical appearance and activity.

Result 26/7/46. No change.

S.O. This case was later investigated and treated in Part 11 of the Thesis. See Case 15.

Case 7. M.K. F. 25 years.

P.C. 22/2/46. There was a single patch of Lupus Erythematosus Discoides about the size of a penny over the left eye. The area was dull red in colour with dry and adherent scaling, dilated follicles and edges showing only slight infiltration.
Duration Three years.

P.H. Nil.

F.H. Nil.

P.T. 10 injections Myocrisin in 1943. 10 injections Bismuth Metal in 1944.

O.I. Showed no abnormalities.

T. 800mgms Mapharside.

P. The patch of the disease showed definite improvment after six injections. The infiltration of the edges was gone and by the end of the first course of treatment, erythema was much less marked, and scaling was almost absent. By the middle of the second course, the lesion had completely disappeared. The skin was slightly atrophied but no definite scar formation was present.

Case 7 (Contd.)

Result 2/8/46 — Cured.

S.O. — No evidence of lesion was present after 32 months of observation.

Case 8 — J.McQ. — F. — 57 years.

P.C. 22/2/46. — There was a single large lesion of Lupus Erythematosus Discoides about one inch in diameter on each cheek. The areas were very erythematous with depressed centres in which scaling was heavy and greasy and follicles widely dilated. Edges were hard and raised.
Duration: Three years.

P.H. — Enlarged cervical glands had been present at approximately eighteen years of age. These were Tuberculous in nature and had required incision.

F.H. — Nil.

P.T. — Six months Sulphonamide therapy in 1943.

O.I. — Showed no abnormalities. No signs of enlarged glands could now be detected in the neck.

T. — 800mgms Mapharside.

P. — On completion of full treatment, there was a definite diminution of scaling. This however was the only change present in the lesions.

Result. 2/8/46. — Slightly improved.

S.O. — This case was subsequently treated by the writer with Bismuth Metal - See Case 21 in the latter series of cases.

Case 9 — S.R. — F. — 24 years.

P.C. 22/2/46. — Scattered patches of the disease were present on both

Case 9. (Contd.)

temples in addition to a typical "Batswing" lesion. All areas were very erythematous and had hard infiltrated edges. Scaling was abundant and greasy and difficult to displace.
Duration: Four years.

P.H. Measles and Scarlet Fever aged five and seven years, respectively. Glandular Tuberculosis right side of neck aged approximately nine years.

F.H. Two children alive and well.

P.T. 12 injections Bismuth Metal given in 1942. Two months Sulphonamide therapy given in 1943.

O.I. General condition was good. Shotty glands were easily palpable in the right side of neck and an old incision scar was present in the right posterior triangle.
X-ray of chest showed "opacity projecting into right costo-phrenic angle". "This is an intra-pulmonary calcified Tuberculous lesion".

T. 800mgms Mapharside.

P. By the end of the first course of treatment, the erythema in all areas had faded. The edges were not so infiltrated and scaling was not so heavy. On completion of treatment, the areas on the cheeks had begun to show development of scar tissue. In other areas, scaling was completely absent and edges were flat and pliable. No clinical activity whatsoever could be detected.

Result 2/8/46. Markedly Improved.

S.O. There was a further spread of scar formation to the nose. Other areas remained inactive after 31 months.

Case 10 I.G. M 52 years.

P.C. There were areas of Lupus Erythematosus Discoides showing typical extensive "Batswing" involvement

Case 10. (Contd.)

extending mid-way over both cheeks. Additional lesions were present on thelobes of ears. The "Batswing" area showed dilatation of follicles with keratotic plugging and heavy yellow scale formation. The centres of the area were definitely depressed and the surrounding edges were very erythematous and infiltrated. On the lobes of the ears, the colour of the areas was violaceous. There was definite telangiectases in the lower part, while the upper part of the lobe showed scarring and atrophy. Biopsy of right cheek confirmed diagnosis of Lupus Erythematosus Discoides.

Duration: Fifteen years.

P.H. Usual childhood ailments.

F.H. Two brothers and two sisters alive and well.

P.T. 12 injections Bismuth Metal given in 1940.

O.I. Showed no abnormalities.

T. 800mgms Mapharside

P. On completion of both courses of treatment, the lesions in all areas,were to all appearances completely unchanged.

Result 16/8/46. No change.

Case 11. A.C. M. 43 years.

P.C. 8/3/46 On each cheek there were areas of Lupus Erythematosus Discoides about the size of a penny. In addition there were rectangular areas, two inches long by one inch wide on both temples. The former lesions showed typical dilated follicles, greasy yellow scales and raised dull red borders. The latter were very erythematous with dilated follicles in a shiny smooth centre which showed no scaling and little infiltration. Small islands of atrophic

Case 11 (Contd.)

scar tissue were present in the rectangle.
Duration: Twenty years.

P.H. Scarlet fever aged fourteen years, pneumonia aged nineteen years.

F.H. Nil.

P.T. 36 injections Myocrisin in 1940 and 1941. 20 injections Bismuth Metal in 1944. Both treatments had no effect.

O.I. Revealed no abnormalities.

T. 800mgms given.

P. On completion of full treatment, no change was apparent in the clinical activity or appearance of the lesions.

Result 16/8/46. No change.

Case 12. S.H. F. 42 years.

P.C. 11/3/46. On the left temple, there was a kidney-shaped area of the disease. This measured two and a half inches long by three quarters of an inch wide. On the right temple there was a small round area about the size of a sixpence. Both lesions were bright red in colour and showed a smooth shiny surface, with dilatation of the follicles. Scaling was minimal and the edges only slightly infiltrated.
Duration: Fifteen months.

P.H. Childhood ailments only.

F.H. Two children aged sixteen years and thirteen years alive and well.

P.T. Nil.

O.I. Showed no abnormalities.

T. 400mgms Mapharside.

P. Lesions showed a very rapid response to treatment and after four injections of Mapharside, there was a great

Case 12 (Contd.)

diminution of the erythema and infiltration of the borders was absent. After 360mgms Mapharside, the areas were completely healed, and were noticable only as a thin pinkish-white scar. Treatment was stopped at the patient's request after the first course of injection.

Result
19/5/46. Cured.

S.O. Scar almost invisible after 34 months. No signs of reactivity.

Case 13. E.R. F. 22 years.

P.C.
14/3/46. There were small areas of the disease on the bridge of the nose and left cheek. A minute lesion was also present on the right cheek. The former lesions showed heavy greasy scaling on a depressed centre with raising and infiltration of the borders of the areas . The minute lesion was bright red in colour and covered with a small adherent spicule.
Duration One year.

P.H. Chickenpox, mumps and diphtheria in childhood. Acute rheumatic fever aged thirteen years.

F.H. Two brother and two sisters alive and well.

P.T. Nil.

O.I. Showed no abnormality.

T. 800mgms Mapharside given.

P. Treatment was started with 0.06gm Mapharside, but the patient experienced severe nausea and headache. After two such injections, the third was reduced to 0.02gm Mapharside. A similar injection was given on the fourth week and then the dose was raised to 0.04gm for the rest of the course. This relieved the toxic symptoms completely. On completion of treatment, the lesion on the left cheek showed sound scar tissue.

Case 13 (Contd.)

The minute lesion had disappeared and the nose, although not completely scarred, showed no clinical activity. All infiltration had gone from the edges and scaling had ceased.

Result 23/5/49. Markedly Improved.

S.O. No reactivity was present after nineteen months observation. Patient defaulted after this date as he had obtained employment in England.

Case 14 F.T. M. 38 years.

P.C. 22/3/46 Multiple areas of Lupus Erythematosus Discoides were present on both cheeks and the nose. All areas were bright red in colour and showed typical dilated follicles. There was only a trace of scaling and only slight infiltration of the edges. A total of eight lesions of varying size and shape were present. Duration: Six years.

P.H. Childhood ailments. Quinsy age eighteen years. Frequent sore throats. Pernicious Anaemia has been present for eight years. Condition is controlled by 2 c.c's Neo-hepatex every three weeks.

F.H. Nil

P.T. Nil

O.I. Showed no abnormality. A blood examination revealed the following information-R.B.C.= 4,900 000 per c.m.m., W.B.C.= 7,200 per c.m.m., H.b 98%. Film showed no abnormality.

T. 800mgm Mapharside.

P. The lesions showed only slight improvement on completion of treatment. Most of the lesions showed slight diminution of erythema but this was the only change observed. The red blood count during the first course of treatment dropped slightly but

Case 14 (Contd.)

progressively and so 2 c.c.s Neo-hepatex was given weekly instead of as before. This resulted in a rapid recovery of the blood.

Result.
30/8/46. Slightly improved.

S.O. This patient was later transferred to the series in Part 11 of the Thesis. See case 42. At that time only 2 c.c.s of Neo-hepatex was required every four weeks.

Case 15 M.McG. F. 23 years.

P.C.
5/4/46. A small area of the disease was present on the left cheek. This was about the size of a shilling piece. Another area of similar size involved the bridge of the nose. Both areas were very erythematous and showed dilatation of the follicles. Scaling was scattered but adherent.
Duration: Two months.

P.H. Scarlet Fever, chickenpox and measles in childhood. Quinsy aged sixteen years.

F.H. Two brothers alive and well.

P.T. Nil.

O.I. Showed no abnormalities.

T. 1200mgms Mapharside.

P. The condition gradually settled. The erythema became less severe and with this scaling diminished. By the end of the first course scar tissue was present on the nose and the patch on the cheek was only a faint blush. By completion of treatment, the nasal lesion had scarred completely and the cheek lesion vanished.

Result.
13/9/46. Cured.

Case 15 (Contd.)

S.O. No change was observed in the lesions after thirty one months observation.

Case 16 E.P. F. 18 Years.

P.C. 5/4/46. There was a typical "Batswing" lesion of the disease present. This area was very erythematous with little or no scaling and no infiltration of the edges. The follicles were dilated and the surface smooth and glistening.
Duration: Three years.

P.H. Childhood ailments only.

F.H. One brother, three sisters alive and well.

P.T. Nil.

O.I. X-ray of sinuses showed slight mucosal changes present in right antrum, consistant with a mild chronic sinusitis.

T. 360mgms Mapharside.

P. The lesion cleared with astonishing rapidity. After six injections no trace of the disease remained and further treatment was stopped at the patient's request.

Result 16/5/46. Cured.

S.O. The lesion remained completely healed and there was no trace of reactivity after thirty three months of observation.

Case 17 C.R. F. 33 years.

P.C. 5/4/46. There was a small area of the disease involving the bridge of the nose. This was dull red in colour and covered with heavy, greasy scaling. The infiltration of the borders was slight.
Duration: Two years.

Case 17(Contd.)

P.H. Nil. relevant.

F.H. One sister alive and well.

P.T. Nil.

O.I. No abnormalities.

T. 1200mgms Mapharside.

P. After the first course of injections, scaling was greatly diminished and infiltration was absent. On completion of treatment, all scaling had ceased and there was no clinical activity in the lesions. Scar tissue development however was not present except for a tiny area in the centre of the bridge of the nose.

Result.
13/9/46. Markedly improved.

S.O. Condition relapsed after twenty months observation. Fresh lesions appeared in the forehead and were about the size of a sixpenny piece with typical characteristics of the disease. The lesion on the nose showed no clinical activity whatsoever.

Case 18 M.Y. F. 39 years.

P.C.
12/4/46. A typical "Batswing" lesion was present. The edges were raised and infiltrated while the centre was depressed and the surface covered with thick yellow follicular plugs. The centre of the left cheek showed small depigmented area of scar tissue. The colour of the edges was violaceous and the centre beneath the scales a bright red.
Duration: Twelve years.

P.H. Scarlet Fever aged twelve. Appendicectomy aged sixteen years, pneumonia aged twenty two years.

F.H. Nil

P.T. Nil.

O.I. Teeth carious, gums septic and bleed easily. Breath

Case 18 (Contd.)

very foul

T. 1200mgms Mapharside.

P. On completion of treatment, edges were still infiltrated and follicular plugging was still heavy.

Result
20/9/46. No change.
S.O. This patient was later transferred to the series of cases described in Part II of the Thesis. See Case 17.

Case 19 M.F. F. 22 years.

P.C. 12/4/46. Typical areas of Lupus Erythematosus Discoides were present on each cheek and on the bridge of the nose. The scaling was thick and yellow on the patches and the borders were infiltrated, raised and erythematous.
Duration: Fourteen months.

P.H. Measles and mumps in childhood. Tuberculous glands present in right side of neck while at school aged thirteen years. Pleurisy right side 1945.

F.H. Nil.

P.T. Five months Sulphonamide therapy, 1945.

O.I. Revealed no abnormalities.

T. 600mgms Mapharside.

P. Response to treatment was rapid and after five injections all infiltration had disappeared from the edges and scaling was absent. There was definite depigmentation of all areas. After another two weeks of treatment, all signs of clinical activity had disappeared. On completion of the first course , the nasal lesion was replaced by depigmented scar tissue. The other areas had completely disappeared leaving small depigmented spots. No further treatment was given at the patient's request.

Result.
20/6/46. Cured.

Case 19 (Contd.)

S.O. All areas remained completely healed and there was no reactivity after thirty three months of observation.

Case 20 J.N. F. 57 years.

P.C. 15/4/46. There was typical scattered areas of the disease on the nose, cheeks and sides of neck. The areas were about three quarters of an inch in diameter, with bright red smooth centres which showed very dilated follicles. The edges were clear cut and only slightly infiltrated.
Duration: Eighteen months.

P.H. Childhood ailments. Repeated attacks of tonsillitis and quinsy aged 32 years. Hysterectomy aged 50 years.

F.H. Nil.

P.T. 10 injections Bismuth Metal 1944.

O.I. Revealed no abnormalities.

T. 1200mgms Mapharside.

P. At the end of the first course of treatment, the lesions showed slight diminution in erythema. On completion of the second course of Mapharside, the lesions were still active and had shown little further change.

Result. 23/9/46. Slightly improved.

S.O. This patient was subsequently transferred to the series in Part 11 of the Thesis for further investigation and treatment. See case 24.

Case 21. W.G. M. 29 years.

P.C. 15/4/46. A typical "Batswing"lesion of the disease was present. the edges were raised and infiltrated and very erythematous. The centre was slightly depressed and showed widely dilated follicles and slight adherent scaling
Duration: Two years.

Case 21 (Contd.)

P.H. Non-venereal urethritis aged 19 years. Severe frost bite of nose two years previously.

F.H. Nil.

P.T. Nil.

O.I. Showed no abnormalities. Gonorrhoeal complement fixation test negative.

T. 1200mgms Mapharside.

P. By the end of the first course of treatment, the lesions showed great improvement. The edge was flat and the erythema markedly diminished. On completion of second course of treatment, the left side of the nose had completely cleared, and only faint erythema remained on the other side and on the bridge. A few dilated follicles were also present on the latter area.

Result 23/9/46. Markedly improved.

S.O. No change was present in the lesion after nineteen months observation. The patient defaulted from this date for an unknown reason.

Case 22. J.McG. F. 29 years.

P.C. 26/4/46. Small scattered areas of Lupus Erythematosus Discoides on the nose, both cheeks and forehead. The areas varied in size from 1 cm. to 1 inch in diameter. The edges were infiltrated and raised and very erythematous. The centres were covered with thick greyish white scales.
Duration: Six months.

P.H. Childhood ailments only.

F.H. Sister died of Tuberculosis when patient was aged 27 years.

P.T. Nil.

Case 22 (Contd.)

O.I. Revealed no abnormalities.

T. 1200mgms Mapharside.

P. After the first course of Mapharside all areas were greatly improved. Erythema was diminished and scaling was almost absent. On completion of treatment, the areas on the nose and left cheek were replaced by sound scar tissue. The other areas on the forehead and right cheek showed no clinical activity and were represented by patches of brownish pigmentation showing an occasional dilated follicles.

Result 4/10/46. Markedly improved.

S.O. No change had occurred in the lesions after thirty months observation. The brownish pigmentation had completely disappeared.

Case 23. E.H. M. 30 years.

P.C. 26/4/46. There were two small erythematous lesions on the nose and forehead. The surface of the patches was shining and showed widely dilated follicles. Scaling and infiltration was almost completely absent. The borders were sharply defined and non-elevated.
Duration: Three and a half years.

P.H. Diphtheria aged eight years, acute rheumatic fever aged fourteen years and repeated attacks of tonsillitis for several years.

F.H. Nil.

P.T. Nil.

O.I. Revealed no abnormalities.

T. 1200 mgms Mapharside.

P. At the end of the first course of treatment, the lesions were almost completely gone. After 900mgms Mapharside had been given, all trace of the lesions had disappeared

Case 23 (Contd.)

and no dilated follicles were noticeable. No scarring was present at the site of the lesions. Second course of treatment was carried to completion.

Result 4/10/46. Cured.

S.O. No evidence of reactivity after thirty months of observation.

Case 24. T.S. M. 33 years.

P.C. 3/5/46. Typical lesions of Lupus Erythematosus Discoides were present on the bridge of the nose and both cheeks. The malar lesions were one and a half inches in diameter and covered with heavy yellow adherent scales. The edges were infiltrated and very erythematous. The area on the nose was sharply defined, bright red in colour and only showed slight scaling and infiltration.
Duration: Three years.

P.H. Childhood ailments, pneumonia aged twenty years.

F.H. Four brothers alive and well.

P.T. Four months Sulphonamide therapy 1944, 16 injections Myocrisin 1944.

O.I. Revealed no abnormality.

T. 1200mgms Mapharside.

P. Lesions at first showed a rapid improvement, and after five injections, scaling and infiltration were much less definite. Improvement then became slower, but at the end of the first course of treated, scarring was well advanced in the nasal lesion. On completion of treatment, the area on the nose had been replaced by sound scar tissue. The other areas on the cheeks showed complete absence of scaling and infiltration and there was no evidence of clinical activity present.

Result. 11/10/46. Markedly Improved.

Case 24 (Contd.)

S.O. After thirty months of observation, the lesions on the cheek had almost entirely disappeared. There was no evidence of reactivity.

Case 25 J.C. F. 28 years.

P.C. 6/5/46 An area of the disease was present on both cheeks. These areas were about one inch in diameter and had raised infiltrated erythematous borders and thickly scaling centres. Multiple areas of the disease were also present on the scalp. In these, scaling was almost absent, the borders were sharply defined and infiltrated and the centres were covered with telangiectases.
Duration: Six years.

P.H. Quinsy aged 20 years.

F.H. Two children alive and well. Two brothers, two sisters alive and well.

P.T. 15 injections Bismuth Metal 1942.

O.I. Showed no abnormalities.

T. 1200mgms Mapharside.

P. On completion of treatment, the scalp lesions showed no clinical activity whatsoever. Scar tissue had started in the centre of all lesions. On the cheeks scaling, infiltration and erythema had entirely disappeared and the patches had been replaced by thin but sound depigmentation scar tissue, in the centre of which there was a slight erythema.

Result 14/10/46. Markedly improved.

S.O. After thirty months observation, all erythema had gone from the facial scars and on the scalp lesions scar tissue had spread.

Case 26 W.H. M. 32 years.

P.C. 6/5/46. There was a large single lesion of the disease on the vertex of the scalp. The lesion was one and a half inches in diameter and the surface was smooth, shining and covered with telangiectases. The borders were well defined but only slightly infiltrated. Scaling was almost completely absent. The lobes of both ears also gave evidence of the disease. They were violaceous in colour, infiltrated and hard and covered with thin adherent silvery scales.
Duration: Four years.

P.H. Childhood ailments.

F.H. Nil.

P.T. 15 injections Myocrisin 1943.

O.I. Revealed no abnormalities.

T. 1200mgm Mapharside.

P After two full courses of treatment, no change was observed in the lesions. The scalp was still active and showed the same infiltrated and sharply defined edge.

Result 14/10/46. No change.

S.O. This case was subsequently transferred to those treated with Bismuth Metal. See Case 23.

Case 27. A.McL. F. 26 years.

P.C. 10/5/46. There was a small area of active disease on the bridge of the nose and another on the right cheek. Both had raised, hard, erythematous borders and centres covered with fine adherent whitish scales.
Duration: Two years.

P.H. Acute Salpingitis aged 20 years. Pneumonia aged 21 years.

F.H. Nil.

P.T. Nil.

Case 27 (Contd.)

O.I. Revealed no abnormalities.

T. 1200mgms Mapharside.

P. On completion of first course of treatment, the lesions were completely inactive and the one on the right cheek had almost completely disappeared. The bridge of the nose showed typical scar formation on the lower half of the lesion while the upper portion had gone, leaving no trace of the lesion. After the first two injections of the second course, all trace of the cheek lesions had disappeared and cure was complete. Treatment however was continued until two full courses of Mapharside had been given.

Result.
18/10/46. Cured.

S.O. No reactivity was evident after thirty months observation

Case 28 J.D. F. 32 years.

P.C.
24/5/46. Typical areas of Lupus Erythematosus Discoides were present on both cheeks. The edges were infiltrated and raised while the centres were depressed and covered with thick scales. On the scalp, there was a circular area of the disease on the vertex. This lesion showed telangiectases over the entire centre, while the borders were sharply defined and infiltrated.
Duration: Three years.

P.H. Childhood ailments. Impetigo Contagiosa aged twenty years.

F.H. Nil.

P.T. Nil.

O.I. Revealed no abnormalities.

T. 300mgms Mapharside.

P. The condition was improving slightly when after 240mgms the patient experienced itching of the dorsum of the hands and wrists. This latter fact however was not

Case 28 (Contd.)

elicited until the patient had developed a papulo-vesicular dermatitis on these areas after a further injection of 0.06gm Mapharside. The dermatitis gradually spread along the forearm and arm. Arsenic therapy was stopped and zinc cream applied locally. The condition soon settled under this treatment. No. further Mapharside was given.

Result.
20/6/46. Slightly improved.

S.O. The patient was later trensferred for bismuth treatment. This was done when all trace of the dermatitis had disappeared. See Case 22.

Case 29. A.W. F. 28 years.

P.C.
24/5/46. There was a typical "Batswing" lesion of the disease, Two large areas on either cheek were joined by a narrow band of the disease across the bridge of the nose All areas had infiltrated, raised edges and centres covered with heavy, greasy scales.
Duration: Four years.

P.H. Tonsillitis aged fifteen and twenty years.

F.H. Two brothers alive and well.

P.T. Nil.

O.I. Revealed no abnormalities.

T. 1200mgms Mapharside.

P. By the end of the first course of treatment all infiltration had gone from the edges of the lesions and scaling was much less evident. On completion of treatment, clinical activity was absent and the left cheek and the nose showed very evident signs of scarring.

Result.
1/11/46. Markedly improved.

S.O. There was no evidence of reactivity, and the lesion

Case 29 (Contd.)

on the right cheek had disappeared after thirty months observation.

Case 30. S.F. F. 40 years.

P.C. 24/5/46. An area of the disease about one inch in diameter was present on the left cheek. The centre was smooth, erythematous and showed widely dilated follicles but little scaling. The borders were slightly infiltrated and well defined.
Duration: Two years.

P.H. Childhood ailments.

F.H. Nil.

P.T. 12 injections Myocrisin 1945.

O.I. Revealed no abnormalities.

T. 1200mgms Mapharside.

P. After a few injections, the area showed definite improvement and by the end of the first course of treatment only a slight erythema remained. By completion of treatment, no trace of the disease was present

Result. 1/11/46 Cured.

S.O. After fifteen months observation there was a definite recurrence of the disease. Fresh lesions had appeared on the right cheek and chin twelve months after cessation of treatment. These lesions were similar in appearance to the original area which however remained completely healed. Further Mapharside therapy on 26/3/48 resulted in the disappearance of the fresh lesions after eight injections.

Case 31. R.McQ. F. 26 years.

P.C. 31/5/46 — There was a small area of Lupus Erythematosus Discoides involving tip of nose. Edge was infiltrated. Centre depressed and covered with closely adherent whitish scales.
Duration: Four years.

P.H. — Childhood ailments. Quinsy aged eighteen years.

F.H. — One sister died with Pulmonary Tuberculosis five years previously.

P.T. — Nil

O.I. — Revealed no abnormalities.

T. — 1200mgms Mapharside.

P. — On completion of first course of Mapharside, all scaling was absent, but infiltration was still present, at upper edge. Scarring present in centre. At end of treatment, all infiltration had disappeared and scarring was now over three quarters of the area.

Result. 8/11/46. — Marked Improvement.

S.O. — No change had occurred in the lesions after thirty months observation.

Case 32 A.L. M. 45 years.

P.C. 31/5/46. — There were multiple areas of the disease on both cheeks and forehead. These were typical of the disease with infiltrated raised edges and centres covered with thick greasy scales. Six lesions in all were present.
Duration: Six years.

P.H. — Childhood ailments only. Rheumatic fever aged twenty years.

F.H. — Nil.

P.T. — 10 injections Lopion 1941; 12 injections Bismuth Metal 1943.

O.I. — Revealed no abnormalities.

Case 32 (Contd.)

T. 1200mgms Mapharside.

P. All lesions showed rapid improvement after the injections, and at the end of the first course of treatment, all scaling had disappeared. On completion of full treatment, there was a complete absence of activity in all lesions and those on the forehead had almost completely disappeared.

Result
8/11/46. Marked Improvement.

S.O. After six months observation, there was definite reactivity present in cheeks. Forehead had cleared completely and a further 10 injections of Mapharside on 12/6/47 again caused activity to subside.

Case 33 J.C. F. 33 years.

P.C.
3/6/46 There was a typical seborrhoeic plaque of the disease on the nose, and the lobes of both ears were cyanotic and lesions presented scarring and definite telangiectasia. The ring and small fingers of both hands were atrophic and skin was shining and covered with very definite telangiectasia.
Duration: Seven years.

P.H. Tuberculous cervical glands in childhood. Scars of incision present on left side of neck. Other childhood ailments.

F.H. Nil.

P.T. 20 injections Bismuth Metal in 1940.

O.I. Revealed no abnormalities.

T. 1200mgms Mapharside.

P. Treatment produced absolutely no improvement in lesions.

Result.
11/11/46 No change.

S.O. The patient was subsequently transferred for further

Case 33 (Contd.)

treatment to the second series of cases in Part 11 of the Thesis. See Case 46.

Case 34. M.P. F. 21 years.

P.C. 14/6/46. Patient had typical erythematous lesions of the disease on right cheek and side of nose. The edges of the lesions were only slightly infiltrated and the centres showed widely dilated follicles on a bright erythematous and shiningly smooth base. Scaling was absent. Diagnosis was confirmed by biopsy of lesion on right side of nose. Duration Six months.

P.H. Nil relevant.

F.H. Two sisters, one brother alive and well.

P.T. Nil.

O.I. X-ray of Sinuses showed slight mucosal changes present in right antrum consistent with chronic sinusitis.

T. 600mgms Mapharside.

P. Lesions healed very rapidly and by the end of the first course of Mapharside all trace of lesions, except the scar of the biopsy had disappeared. Treatment was stopped at the patient's request at the end of the first course.

Result. 23/8/46. Cured.

S.O. There was no reappearance of the lesions after thirty two months observation.

Case 35 A.S. F. 68 years.

P.C. 14/6/46. There were three lesions about one inch in diameter on the forehead and another on the right side of the nose. The areas were sharply defined with raised infiltrated, erythematous edges and centres depressed, duller in

Case 35 (Contd.)

colour and covered with scattered adherent whitish grey scales.
Duration Eighteen months.

P.H. Rheumatic fever aged twenty years. Pneumonia aged twenty two years.

F.H. Nil.

P.T. Nil.

O.I. Revealed no abnormalities.

T. 1200mgms Mapharside.

P. By the end of the first course of treatment, lesions were greatly improved and lesion on nose showed definite scarring in centre. Lesions on forehead were less erythematous and not infiltrated. On completion of treatment, there was no activity present in any of the lesions. The nose was completely scarred and this was well advanced in the other lesions.

Result.
22/11/46. Markedly Improved.

S.O. Lesions showed no change other than further scar formation on forehead after thirty months observation.

Case 36. C.McP. F. 38 years.

P.C.
14/6/46. Typical "Batswing" lesion of disease present. Lesion very erythematous with little or no scaling and no infiltration of edges. Follicles dilated and surface was glistening.
Duration: Two years.

P.H. Repeated attacks of Tonsillitis. Childhood ailments.

F.H. Two children alive and well.

P.T. 10 injections of Bismuth Metal 1944.

O.I. Revealed no abnormality. Mantoux 1/10,000 - negative

T. 900mgms Mapharside.

Case 36 (Contd.)

P. By the end of the first course of treatment, lesions were almost absent. Erythema was practically gone except over bridge of nose. By midway through the second course of treatment, the lesions had entirely disappeared and at the patient's request treatment was stopped.

Result 25/10/46. Cured.

S.O. Lesions showed no change thirty one months later.

Case 37 T.H. M. 32 years.

P.C. 20/6/46. There were seborrhoeic lesions on each cheek with raised, infiltrated edges and dull erythematous scaling centres. On the ears, there was definite scarring in lower parts of lobes with scaling and telangiectasia on upper part of lobes.
Duration: Five years.

P.H. Pneumonia aged 22 years. History of cervical glands, Tuberculous in origin when at school. Incision scar left side of neck. Small shotty glands still present in left side of neck.

F.H. Nil.

P.T. Nil.

O.I. Revealed no abnormality. Mantoux 1/10,000 positive.

T. 1200mgms Mapharside.

P. No change in the lesions occurred even after two full courses of treatment.

Result. 29/11/46. No change.

S.O. The case was transferred for treatment with bismuth injections. See Case 24 in bismuth series.

Case 38. P.L. F. 34 years.

P.C. 21/6/46. Patient had a small erythematous area about size of a sixpence on bridge of nose. There was little infiltration of the edges and the area was covered with silvery adherent scales. On removal of these, there was a bright erythematous base with dilatation of the follicles.
Duration: Two years.

P.H. Childhood ailments. Appendicectomy aged twenty one years.

F.H. Two children alive and well. One child died diphtheria aged two years.

P.T. Nil.

O.I. X-ray of nasal sinuses revealed slight mucosal changes in right antrum, consistent with chronic sinusitis. Mantoux 1/10,000 negative.

T. 780mgms Mapharside.

P. Lesion responded well to treatment. Scaling had stopped and erythema was almost absent by end of first course. On starting the second course, there was only a slight scar at centre of original lesion. Only 180mgms Mapharside was given in the second course when patient requested injections to be stopped.

Result. 11/10/46 Cured.

S.O. Only a faint scar on bridge of nose remained after thirty one months of observation. This was white, thin and pliable.

Case 39 J.F. F. 30 years.

P.C. 21/6/46. Large single erythematous deep seated lesion on right cheek. Lesion was one inch in diameter. Edge not raised but infiltrated . Centre showed dilated follicles and dilatation of superficial vessels. Scaling was absent.
Duration: Four months.

P.H. Childhood ailments. Repeated attacks of tonsillitis since 23 years of age. Tuberculous glands in right side

Case 39 (Contd.)

of neck as a child. Incision not necessary. Glands still palpable, shotty and hard.

F.H. One son aged five years alive and well.

P.T. Nil.

O.I. Revealed no abnormalities. Mantoux 1/10,000 positive.

T. 1200mgms Mapharside.

P. All infiltration and dilatation of vessels had gone by end of first course of treatment. Lesion completely disappeared with no scarring, midway through second course of treatment, which however, was completed.

Result.
29/11/46.. Cured.

S.O. No recurrence in the lesion after thirty months observation.

Case 40. M.D. F. 25 years.

P.C.
28/6/46 Patient had multiple, typical erythematous lesions of the disease on forehead and neck. There was six lesions in all and each was of a dull erythema, with slight infiltration of edges and only minimum of scaling was present over the centres.
Duration: Four years.

P.H. Mumps and measles in childhood. Diphtheria age twelve years. Recurrent sore throats since age of twenty years.

F.H. Two brothers alive and well.

P.T. Nil.

O.I. X-ray of sinuses revealed severe mucosal changes in both antra, consistent with severe chronic sinusitis. Mantoux 1/10,000 negative.

T. 1200mgms Mapharside.

P. Two full courses of treatment produced absolutely no

Case 40 (Contd.)

change in the lesions.

Result.
6/12/46. No change.

S.O. After an interval of six months, the case was transferred to the second series of cases in Part 11 of the Thesis. See Case 5.

Case 41. W.J. M. 27 years.

P.C.
28/6/46. Patient had a patch of the disease one inch in diameter on left cheek. This had very erythematous raised and infiltrated border and depressed dull centre covered with thick white scales.
Duration: Two years.

P.H. Pneumonia aged eight years. Childhood ailments.

F.H. Nil.

P.T. 20 injections Myocrisin in 1944. 4 months irregular Sulphonamide therapy 1945.

O.I. X-ray of chest revealed an old healed and calcified Tuberculous focus at right apex. No recent activity obvious. Mantoux 1/10,000 positive.

T. 1200mgms Mapharside.

P. By the end of first course of treatment, lesion was only slightly changed. After third injection of second course, a rapid improvement took place. Scarring started in centre of lesion. Infiltration of edges lessened. On completion of treatment, no activity in lesion was visible, and scar occupied half area of lesion.

Result.
2/12/46. Cured.

S.O. The scar was pliable, thin and white and showed no evidence of reactivity after thirty months observation.

Case 42. M.F. F. 29 years.

P.C. 1/7/46. Patient had typical "Batswing" lesion. Area on left cheek was larger than that on right cheek. Each lesion had typical infiltrated and raised borders with depressed dull red scaling centres.
Duration: Four years.

P.H. Childhood ailments. Tuberculous glands developed in right side of neck age eight years. These settled without incision but small shotty glands are still palpable in right posterior triangle. Rheumatic fever aged eighteen years.

F.H. Two brothers alive and well.

P.T. 12 injections Myocrisin 1942. 6 months regular Sulphonamide therapy 1943.

O.I. X-ray of chest revealed healed and calcified glands Tuberculous in origin in left hilar region. No recent activity was evident. Mantoux 1/10,000 positive.

T. 1200mgms Mapharside.

P. On completion of two full courses of treatment, there was only the slightest improvement in the areas. The right cheek lesion was well healed but left side was still active.

Result. 8/12/46. Slight improvement.

S.O. This case was subsequently transferred for treatment with bismuth injections. See Case 25.

Case 43. H.McL. M. 32 years.

P.C. 5/7/46. Patient had single small lesion on left cheek. This was about half an inch in diameter and had only slightly infiltrated although well marked edges. Area was bright red and centre smooth with dilated follicles. Biopsy confirmed diagnosis.
Duration; Eighteen months.

P.H. Nil relevant.

F.H. Two children alive and well.

Case 43 (Contd.)

P.T. Nil.

O.I. Revealed no abnormality. Mantoux 1/10,000 negative.

T. 900mgms Mapharside.

P. Lesion responded rapidly to treatment and by the end of the first course of treatment it was almost comp etely gone and only faint scarring remained. Half way through the second course of treatment, lesion had completely disappeared and treatment was stopped at the patient's request.

Result.
8/11/46. Cured.

S.O. Patient had recurrence of lesion on same area within six months of stopping treatment. A further course of 10 injections of Mapharside started on 12/6/47, again produced a cure and after twenty one months, there had been no further recurrence.

Case 44. J.McC. F. 30 years.

P.C.
5/7/46. There was a typical seborrhoeic type of lesion on left cheek with thick infiltrated edges, and depressed centre showing dilated follicles and heavy yellow scaling. On lobes of ears, there was cyanotic erythema and telangiectasia.
Duration: Five months.

P.H. Repeated attacks tonsillitis since age 24 years. Two children alive and well. Two miscarriages before and after second child.

F.H. Nil relevant.

P.T. Nil.

O.I. Revealed no abnormalities. Mantoux 1/10,000 positive.

T. 600mgms Mapharside.

P. Lesions responded well to treatment and all infiltration had gone from area on cheek and erythema had gone from

Case 44 (Contd.)

ears. As patient was four months pregnant at end of 1st course of treatment, Mapharside was discontinued.

Result 12/9/46. Marked Improvement.

S.O. The patient aborted after five and a half months pregnancy. After thirty two months observation, the lesions were still inactive but not scarred completely on the cheek. The patient declined further treatment with arsenic. There had been no further pregnancies.

Case 45. R.S. M. 42 years,

P.C. 8/7/46. The patient had an erythematous but scaly lesion involving bridge of nose and also three similar lesions on forehead. Lesions were bright red, slightly infiltrated and covered with adherent silver scales. Duration: Four years.

P.H. Gonorrhoea aged twenty years. Childhood ailments.

F.H. Three children alive and well.

P.T. 20 injections Myocrisin in 1943.

O.I. Revealed no abnormality. Mantoux 1/10,000 positive. Gonorrhoeal fixation test negative.

T. 1200mgms Mapharside.

P. Lesions responded slowly but steadily to treatment with lessening of erythema and scaling. Lesion on nose was healed completely and others on forehead were well advanced by the end of the first course of treatment. Complete clinical cure was apparent after 840mgms Mapharside. Two lesions on forehead showed thin pliable scars and remaining lesions had completely disappeared leaving only slight staining. Treatment was continued until completion of second course.

Result 16/12/46. Cured.

Case 45 (Contd.)

S.O. After an observation period of twenty nine months, no change had occurred in the scars and no reactivity of the lesions was visible.

Case 46. H.W. M 35 years.

P.C. 12/7/46. There were typical seborrhoeic type lesions on both cheeks. Borders were erythematous and raised but infiltration was not severe. Centre showed widely dilated follicles and heavy greasy scaling. There were two patches on right cheek and one on left. Biopsy from left cheek confirmed diagnosis.
Duration: Six and a half years.

P.H. Childhood ailments. Tuberculous glands had been present in left side neck while at school. Old incision scar left side and shotty glands still present.

F.H. One brother alive and well. One son alive and well.

P.T. 20 injections Bismuth Metal 1945.

O.I. Revealed no abnormality. Mantoux reaction 1/10,000 negative.

T. 1200mgms Mapharside.

P. Lesions responded very slowly to treatment and at end of first course of therapy, they were only slightly improved. Scaling was much less and erythema was not so bright. Response of the lesions during the second course of treatment was dramatic and after an interval of only three weeks after the first course, the second course was started. Within a few weeks, all elevation o borders had disappeared and scarring was well advanced. By end of treatment, only faint activity was present in one of patches on right cheek. This was replaced by sound scar tissue within three weeks of stopping treatment and case was classified as clinically cured.

Result. 13/10/46. Cured.

S.O. No recurrence of lesions after thirty months observation.

Case 47. J.N. F. 33 years.

P.C. 12/7/46. Patient showed numerous very active lesions on forehead, bridge of nose and both cheeks. In all, seven lesions were present and each had raised infiltrated and very erythematous borders. Centres showed only slight adherent scaling. Lesions were itching and tender to the touch.
Duration: Four years.

P.H. Patient had Tuberculous glands in neck during childhood. Glands were still hard, shotty and easily palpable. Quinsy aged seventeen years followed by tonsillectomy.

F.H. Two brothers, one sister alive and well. One daughter aged eight years alive and well.

P.T. 15 injections Myocrisin 1943. 10 injections Bismuth Metal 1944. 4 months irregular Sulphonamide treatment 1944.

O.I. X-ray of chest revealed healed and calcified Tuberculous lesion in left apex. No recent activity was obvious. Mantoux reaction 1/10,000 positive.

T. 1200mgms Mapharside.

P. Two full courses of treatment produced no definite change in clinical appearance of the lesions, although itching and tenderness had disappeared.

Result 20/12/46. No change.

S.O. Patient failed to report for inclusion in second series of cases although requested to do so.

Case 48 E.S. F 34 years.

P.C. 19/7/46. Patient had a fairly extensive area of Lupus Erythematosus Discoides on left cheek. This presented typical seborrhoeic features with very active red, raised and infiltrated edges. Centre was depressed, scarred in a few areas and in others showing activity evidenced by heavy greasy scaling over dilated follicles. On upper lip was another small area with bluish red centre and typical dilated radially running vessels.
Duration: Three years.

P.H. Childhood ailments only. Tuberculosis of spine aged

Case 48 (Contd.)

eighteen years. Patient had haemoptysis aged thirty years. This was treated by rest in bed for several months.

F.H. One sister alive and well.

P.T. Nil.

O.I. X-ray of chest revealed numerous scattered Tuberculous foci in lungs but all were healed and inactive. No recent activity was present. X-ray of spine showed no evidence of active Tuberculosis. Mantoux reaction 1/10,000 positive.

T. 1200mgms Mapharside.

P. Two full courses of treatment produced little or no change in the lesions. Activity in edges was still very definite.

Result 27/12/46. No change.

S.O. Patient was treated in second series of cases in Part 11 of Thesis. See case 4.

Case 49. S.M. F 48 years,

P.C. 19/7/46. Patient had two typical lesions of the disease on left cheek. These were about the size of a sixpence and were bright red with sharply defined active borders, and a shining violaceous red centre with widely dilated follicles. On the scalp there was a single lesion on the vertex. This was one inch in diameter and showed typical telangiectasia on surface and hard infiltration of the edges.
Duration: Four years.

P.H. Measles and mumps in childhood. Blepharitis and styes for many years.

F.H. One daughter, three sons alive and well.

P.T. 20 injections Bismuth Metal.

O.I. X-ray investigation of Sinuses showed mucosal thickening

Case 49 (Contd.)

very marked in both antra. These changes were consistent with severe chronic sinusitis. Mantoux reaction 1/10,000 positive.

T. 1200mgms Mapharside.

P. On completion of two full courses of treatment, only slight improvement could be detected in lesions. There was slight lessening of erythema and slight scarring in scalp lesion.

Result 27/12/46. Slight improvement.

S.O. Case transferred to second series of patients. See Case 54.

Case 50. J.L. F. 22 years.

P.C. 22/6/46. Patient had nodular deep seated lesion on right cheek. The surface of this area was about three quarters of an inch in diameter. It was raised above the surface, purplish red in colour and showed dilated follicles and slight telangiectasia.
Duration: Eighteen months.

P.H. Carbuncle aged sixteen years. Childhood diseases.

F.H. One brother and one sister alive and well.

P.T. 10 injections Bismuth Metal in 1945. Three months very irregular Sulphonamide therapy in 1945.

O.I. Revealed no abnormality. Mantoux reaction 1/10,000 negative.

T. 1200mgms Mapharside.

P. Response of lesion to treatment was very steady and by the end of the first course of treatment all elevation had gone but lesion was still palpable. By end of second course of treatment all trace of the lesion had gone with the exception of slight atrophy of the skin over the area which had been affected.

Result 30/12/46. Cured.

Case 50 (Contd,)

S.O. No change in the atrophy had occurred and there was no recurrence of the lesions after thirty six months observation.

Case 51. J.McK. F. 29 years.

P.C. 26/7/46. Areas of the disease were present on both cheeks. These were equal in size and about three quarters of an inch in diameter. Borders were infiltrated, erythematous and slightly raised. Centre was violaceous in colour and covered with slight adherent silvery scaling. Duration Two years.

P.H. Childhood ailments. Pneumonia aged eighteen years again aged 22 years.

F.H. One daughter aged four years alive and well. Two sisters alive and well.

P.T. Nil.

O.I. X-ray of chest revealed a small Tuberculous focus in left apex. No recent activity was evident. X-ray of sinuses showed diminution of translucency in the right antrum. This was consistent with mild chronic inflammatory changes. Mantoux reaction 1/10,000 positive.

T. 1200mgms Mapharside.

P. A few hours after the first injection of 0.06gm Mapharside the patient experienced nausea, headache, profuse prespiration and slight fever. The two lesions became very erythematous, tender and borders were oedematous. This reaction soon settled and on examination the following day, there was no evidence of general constitutional disturbance although the two lesions definitely showed signs of irritation. This had completely settled one week later and a second injection of 0.06gm Mapharside was given. Constitutional disturbance was again experienced but to a lesser degree. The areas of Lupus Erythematosus Discoides again showed evidence of irritation. This constitutional upset disappeared after the third injection although local disturbance of the

Case 51 (Contd.)

patches continued until after the fifth injection. From that time, injections of Mapharside caused no reactions. Lesions steadily improved and on completion of the second course of treatment, the lesion on the left cheek was almost completely invisible, while that on the right cheek showed an area of sound scar tissue in the centre with no surrounding clinical activity.

Result 3/1/47. Markedly Improved.

S.O. No trace of lesion on left cheek. Right cheek shows small depigmented sound scar tissue. No activity present after thirty months of observation.

Case 52. W.W. M 24 years.

P.C. 2/8/46. On left templar region there was an oval plaque of the disease one and a half inches long and half an inch wide. Edges were only slightly thickened and centre was bright red, smooth, shining and covered with dilated follicles a few of which showed slight plugging. A similar small area about the size of a sixpence was present on the tip of the nose.
Duration: Two years.

P.H. Childhood ailments. Rheumatic fever aged seventeen years.

F.H. One sister alive and well. Father and mother still alive.

P.T. 15 injections Bismuth Metal in 1944.

O.I. Revealed no abnormalities. Mantoux reaction 1/10,000 positive.

T. 1200mgms Mapharside.

P. Condition improved very rapidly on nose, by the end of the first course this lesion had almost disappeared. The temple lesion was less erythematous and much smaller. On completion of treatment, this lesion had also gone leaving only a faint brownish staining.

Result. 10/1/47. Cured.

Case 52 (Contd.)

S.O. No trace of lesions was present except for a slight depigmentation of the nose. No trace of staining on left templar region was now visible after an observation period of thirty months.

Case 53. C.R. F. 38 years.

P.C. 5/8/46. On the patient's chin there were two areas of the disease. These were about the size of a shilling. They had raised erythematous borders and depressed centres showing dilated plugged follicles. Borders were covered with thick dry greyish white adherent scales. In left ear, the rim and lobe showed very dilated follicles. On upper part of the rim there was adherent scaling and definite follicular plugging. The lobe showed very definite telangiectasia and only the slightest trace of fine scaling.
Duration: Three years.

P.H. Perforated Ulcer in Duodenum aged twenty six years. Quinsy aged twenty eight years and repeated attacks of tonsillitis since then.

F.H. One daughter had rheumatic fever. Son alive and well.

P.T. Nil

O.I. Revealed no abnormalities. Mantoux reaction 1/10,000 negative.

T. 480mgms Mapharside.

P. Lesions did not show any early response to treatment and after the eighth injection, the patient developed a dermatitis.

Result 23/9/46. No change.

S.O. After fifteen months observation, the patient was transferred to second series of cases in part 11 of the Thesis. See Case 56. A patch test with 0.04gm Mapharside in 100c.cs water was positive one year after the disappearance of the original attack and produced a localised area of dermatitis.

Case 54. A.W. F 25 years.

P.C. 16/8/46. Patient presents classical "Batswing" lesion of the disease. There were two large areas on the cheeks united by a narrow strip of the condition over the bridge of the nose. The lesion was very erythematous with welldefined but non-infiltrated edges. Centre was smooth, shining and showed very dilated follicles. Scaling was absent except for a small area on the bridge of the nose, where it was fine and closely adherent to the underlying epidermis.
Duration: Five years.

P.H. Measles and whooping cough in childhood. Chorea aged eight years, Anaemia - probably Hypochromic Microcytic aged twenty two years.

F.H. One brother suffers from heart disease. One sister alive and well.

P.T. Nil.

O.I. Revealed no abnormality. Mantoux reaction 1/10,000 negative.

T. 1200mgms Mapharside.

P. Lesions on cheeks showed a rapid response to treatment with a fading of erythema and lessening of dilation of follicles. On the nose, the response to treatment was much slower and on completion of the first course of treatment, there was little change in its appearance. At the end of the second course of Mapharside however, all scaling had ceased although there was still slight erythema. The cheek lesions had disappeared except for the left patch which had been replaced by an unexpected depigmented area of scar tissue.

Result. 24/1/47. Markedly improved.

S.O. On examination nine months after cessation of treatment, reactivity was evident on the nose. This had been present for one month and scaling was thick and adherent A course of 12 injections of Mapharside started on 17/10/47 had an excellent effect and all activity had once again disappeared and observation nine months later revealed no reactivity. Patient did not reappear for further survey after this date.

Case 55. T.McC. M. 30 years.

P.C. 19/8/46. On both sides of the nose there was a small area of the disease. These areas had raised and definitely infiltrated borders. The centres were depressed and covered with heavy greyish white greasy crusts. These crusts were easily detached and the surface of the centres then showed very dilated follicles. On the index fingers of both hands, there was a definite patch of the disease. This area was cyanotic in colour with definite dilatation of the follicles on its surface. The edges were sharply demarcated although only slightly infiltrated.
Duration: Six years.

P.H. Pneumonia aged eighteen years. Several attacks of tonsillitis for ten years. Repeated headaches for many years.

F.H. One brother alive and well. Two children healthy.

P.T. Nil.

O.I. X-ray of sinuses revealed definite thickening of mucosa in all sinuses which was consistent with a chronic and severe pansinusitis. Mantoux reaction 1/10,000 positive.

T. 1200 mgms Mapharside.

P. During treatment there was little or no change in the appearance of the lesions.

Result. 27/1/47. No change.

S.O. Patient was reinvestigated and treated in second series of cases in Part 11 of the Thesis - See Case 39.

Case 56. H.M. F 45 years.

P.C. 23/8/46. Patient had typical patch of Lupus Erythematosus Discoides on right cheek. This was the size of a florin. The area was brightly erythematous with little infiltration or scaling, but with very widely dilated follicles in a smooth shining centre. On the lobe of the right ear, there was another area of the disease. This latter patch was cyanotic in appearance and was covered with yellowish dry closely adherent scales. The clinical diagnosis was

Case 56 (Contd.)

confirmed by biopsy and histological examination of a portion from the cheek lesion.
Duration: Eighteen months.

P.H. Childhood ailments.

F.H. Three children alive and well. Two brothers alive and well.

P.T. Nil.

O.I. Revealed no abnormalities. Mantoux reaction 1/10,000 positive.

T. 780mgms Mapharside.

P. Both lesions responded rapidly to treatment. In the cheek, the erythema became much less intense and in the ear, the lobe lost its cyanotic appearance after only five injections. On completion of the first course of treatment, only faint staining was present on the cheek, and a few dilated follicles in an apparently normal lobe of ear. After three injections in the second course, the patient requested to stop injections as only faint staining remained on the cheek.

Result.
13/12/46. Cured.

S.O. All staining had disappeared from the cheek. There was no evidence of reactivity after thirty months observation.

BISMUTH TREATED CASES.

The 25 cases treated by the writer with injections of Bismuth Metal shall now be included in the appendix. The abbreviations and method of describing the patients, shall be similar to those used in the first 56 cases.

Case 1 I.H. F. 42 years.

P.C. 20/9/46. The patient had a typical patch of Lupus Erythematosus Discoides on each cheek. These were almost circular and approximately one inch in diameter. The borders were very erythematous, raised and infiltrated. The centres were depressed, smooth and shining, with dilated follicles, and complete absence of scarring. On the left side, there was a small subsiduary area of similar appearance at the outer angle of the eye. Duration: One year.

P.H. Rheumatic fever aged eighteen years. Childhood ailments.

F.H. Five children alive and well. Eldest eighteen years, youngest six years.

P.T. Nil.

O.I. Revealed no abnormalities.

T. 2.4g Bismuth Metal.

P. All lesions responded rapidly to treatment. The erythema and infiltration of the borders disappeared completely, within 4 injections. After 8 injections, only a brownish stain was present at both areas on the left side and on right side, the single lesion had disappeared completely. Treatment was stopped at the patient's request

Result 8/11/46. Cured.

S.O. There was slight brown pigmentation still present at the outer canthus of left eye but no signs of reactivity was present after thirty two months observation.

Case 2. E.L. F. 45 years.

P.C. 20/9/46. On left cheek there was a quadrangular lesion of the disease about one inch long and half an inch wide. This had raised dull red infiltrated borders. The centre was covered with yellowish white greasy adherent scales. On the nose another lesion was present. In the upper portion, there was distinct depigmented scarring while in the lower part of the area, there was activity aimilar to that on the cheek.
Duration: Eight years.

P.H. Diphtheria in infancy. Scarlet fever and measles at school. Repeated attacks of tonsillitis during past twelve years.

F.H. Two daughters alive and well.

P.T. Nil.

O.I. Revealed no abnormalities.

T. 6g Bismuth Metal.

P. Lesions responded gradually to treatment. On completion of first course of treatment, all activity had gone from area on the nose and scar formation had advanced. Cheek lesions showed absence of infiltration and flattening of the border anddiminution of scaling. At the end of the second course of bismuth, the nose was completely scarred over and in the cheek, scar tissue was present in the centre of the lesion and the edges showed no activity.

Result. 27/2/47. Markedly Improved.

S.O. After twenty seven months observation, the nose showed sound scar tissue. The cheek lesion had disappeared except for a small inactive area at the upper edge and a thin scar near the original centre of the lesion.

Case 3. J.S. F 29 years.

P.C. 23/9/46. There was a small area involving bulbous portion of nose. This was about the size of a sixpenny piece. The edges were infiltrated and covered with adherent white scales. The centre was depressed and showed dilated, plugged

Case 3 (Contd.)

follicles
Duration: Two years.

P.H. Appendicectomy aged twenty years. Childhood ailments.

F.H. Nil

P.T. Nil.

O.I. Revealed no abnormalities.

T. 6g. Bismuth Metal.

P. Lesion responded very slowly to treatment but by end of first course of bismuth, the border had flattened and follicular plugging had disappeared from centre. At the start of the second course of treatment, definite scar formation was present in the centre of the lesion. After five injections, patient developed a well marked Bismuth line around the gums. Treatment was continued. On completion, all activity had gone from the lesion and about three quarters of it was replaced by sound scar tissue, which was thin and depigmented.

Result
24/2/47. Markedly Improved.

S.O. Lesion completely replaced by sound scar tissue. No fresh activity after twenty eight months.

Case 4. J.McP. F. 35 years.

P.C.
4/10/46. Extensive patches of the disease were present on the nose, both cheeks and both lips. The edges of the patches on the nose and cheeks were very erythematous, infiltrated and raised. The centres were depressed, covered with thick adherent scales and in small scattered patches, there was thin scar tissue indicating spontaneous healing. On the lips, the areas were telangiectatic and covered with thin adherent and almost transparent scales. There was no ulceration in any area.
Duration: Twenty years.

P.H. Childhood ailments. Rheumatic fever aged fifteen years. Nervous debility for ten years.

Case 4 (Contd.)

F.H. One daughter aged thirteen years. One sister alive and well.

P.T. Nil.

O.I. Revealed no abnormality.

T. 6g Bismuth Metal.

P. On completion of two full courses of bismuth treatment, there was no change in the clinical appearance of the lesions.

Result.
14/3/47. No change.

S.O. Nil. Patient did not report for further treatment.

Case 5. F.J. F. 29 years.

P.C. 4/10/46. Patient had a small erythematous lesion involving the bridge of the nose. This was about the size of a sixpenny piece. The edges were neither raised nor infiltrated and the centre showed dilatation of the follicles but complete absence of scaling.
Duration: Two months.

P.H. Pneumonia aged ten years. Chicken pox, mumps and measles in childhood.

F.H. Two brothers and two sisters alive and well.

P.T. Nil.

O.I. Revealed no abnormalities.

T. 4.2g Bismuth Metal.

P. Lesion responded very rapidly to treatment. On completion of first course of treatment, all erythema had gone and only faint staining remained. After four injections of the second course, treatment was stopped at the patient's request. All trace of the lesion had vanished.

Result
31/1/47 Cured.

Case 5 (Contd.)

S.O. There was no evidence of the lesion or any signs of reactivity of the disease after twenty eight months observation.

Case 6. A.D. M. 43 years.

P.C. 4/10/46. Large quadrangular lesions two inches long and one inch wide were present on both temporal regions. The borders were elevated, hard and covered with adherent silvery scales. The centres were smooth, shining and covered with telangiectases and very dilated follicles. Scaling was absent in the centres.
Duration: Three years.

P.H. Childhood ailments only.

F.H. Four children alive and well. One child died from diphtheria in 1940 aged four years.

P.T. Nil.

O.I. Revealed no abnormality.

T. 6g. Bismuth Metal.

P. Lesions responded slowly to treatment. On completion of the first course of injections, there was a well marked bismuth line around carious lower teeth. All infiltration of the edges had gone but erythema in lesions was still very definite. Scarring was present at upper part of left patch. At the end of the second course, all activity had gone from both lesions. They were quite flat and skin was pliable. All scaling was absent, and follicles appeared to be normal. Left side scarring had advanced considerably.

Result. 14/3/47. Markedly improved.

S.O. Ten months after completion of treatment, patient reported with very definite activity in right sided lesion. Left lesion had disappeared completely except for an area of scar tissue at its upper pole. Further bismuth therapy was carried out again with marked improvement in the lesion.

Case 7. T.McS. F. 34 years.

P.C. 11/10/46. On examination there were small areas of Lupus Erythematosus Discoides on each cheek and the bridge of the nose. These areas were about the size of a sixpenny piece and were very erythematous. The edges were sharply defined but neither raised nor infiltrated. The centre was smooth and shining and showed widely dilated follicles. The diagnosis was confirmed by biopsy of the lesion on the left cheek.
Duration: Ten months.

P.H. Childhood ailments. Enlarged Tuberculous glands right side of neck when at school. Incised and drained. Shotty glands still palpable and puckered incision scar visible. Nephritis after birth of baby.

F.H. Two children aged eight and four years.

P.T. Nil.

O.I. Revealed no abnormalities.

T. 4.8g Bismuth Metal.

P. Lesions showed exceptionally rapid response to treatment and by the sixth injection only the lesion on the right cheek remained. By the end of the first course of treatment, there was only the biopsy scar to mark the site of the left lesion. On the nose, no trace of the diseased area was visible. On the right cheek, there was a tiny depigmented thin scar about one third of the original lesion. Treatment was stopped at the patient's request after the sixth injection of the second course.

Result. 21/2/47. Cured.

S.O. No reactivity in any of the areas after twenty six months observation.

Case 8 R.F. F. 38 years.

P.C. 18/10/46. There was a classical "Batswing" area of the disease. The edges of the lesion were infiltrated and raised and the centres depressed, dull red in colour and covered with adherent silvery grey thin scales. The follicles were widely dilated and showed very definite plugging.
Duration: Three years.

Case 8 (Contd.)

P.H. Tuberculous adenitis in right side as a child aged eight years. Shotty glands still palpable. Diphtheria aged twelve years, Rheumatic fever aged twenty two years.

F.H. Unmarried. Two brothers, one sister alive and well. One sister died Infantile Paralysis 1942.

P.T.

O.I. Revealed no abnormality.

T. 4.8g Bismuth Metal.

P. Lesions responded slowly but steadily to treatment. Borders became less erythematous and less infiltrated and centres showed much less scaling. By completion of the first course of treatment, the borders had become flat and imperceptable to the touch. The follicles showed much less definite plugging and all excessive scaling had ceased. Treatment was stopped at the patient's request after the sixth injection in the second course of bismuth. By this time, the lesion on the left cheek and the bridge of the nose had been replaced by much reduced scar tissue. The right cheek however still showed dilated follicles at its centre but no clinical activity.

Result 28/2/47 Marked improvement.

S.O. There was no change in the lesions and no fresh activity after twenty six months observation.

Case 9. M.M. M. 42 years.

P.C. 18/10/46. There was widespread involvement of the nose, both cheeks and both ears. The lesions were of the seborrhoeic variety with raised infiltrated edges and depressed, scale covered centres. The ears were very erythematous, tender and painful especially during warm weather. Duration: Five years.

P.H. Always healthy. Youngest of a family of six.

F.H. Four brothers alive and well. One sister died with Rheumatic heart disease aged forty six years.

Case 9 (Contd.)

O.I. Revealed slight mucosal thickening in the right antrum which was consistent with a mild sinusitis.

T. 6g Bismuth Metal.

P. Even after two full courses of bismuth injections, the lesions showed no change in their clinical appearance. The patient stated however that the ears were much less tender and not so painful.

Result.
28/3/47. No change.

Case 10 J.Q. M. 30 years.

P.C.
28/10/46. The patient presented two small areas of the disease one on either cheek. These were about one inch in diameter and were erythematous in type, with sharply defined edges and bright red smooth shining centres, in which dilated follicles were very numerous.
Duration: Eighteen months.

P.H. Childhood ailments. Repeated attacks of tonsillitis for many years.

F.H. Two daughters aged five and two years.

P.T. Nil.

O.I. Revealed mucosal thickening in the right antrum which was consistent with mild chronic sinusitis.

T. 3.6g Bismuth Metal.

P. The lesions responded rapidly to treatment but unexpected, there remained a very definite depigmented scar on the left cheek. This scar was only about half the size of the original lesion and was thin and pliable. The right sided lesion had disappeared without trace at the end of the first course of treatment. After the second injection in the second course, the patient declined further treatment.

Result
10/2/47. Cured.

S.O. No reactivity was visible and the scar remained depigmented

Case 10 (Contd.)

but sound, after twenty six months of observation.

Case 11. F.McD. F. 39 years.

P.C. 8/11/46 The patient had a typical "Batswing" lesion of Lupus Erythematosus Discoides. The borders were very red, raised and infiltrated while the centres of the areas were depressed and covered in thick yellowish white scales. In a few small areas, on the left cheek, the lesion was showing the start of scar tissue formation. Duration: Two years, six months.

P.H. Childhood ailments. Nervous "breakdown" aged twenty six years. Troubled with nervous attacks ever since then.

F.H. Unmarried. Two brothers alive and well.

P.T. Nil.

O.I. Revealed no abnormality.

T. 6g Bismuth Metal.

P. Lesions responded to treatment rapidly at first and then progress became gradually slower. By the end of the first course of treatment, all infiltration had disappeared from the borders and centres showed complete absence of scaling. The scar tissue on the left cheek had greatly increased and now involved the whole lesion. There was a fairly definite bismuth line at the lower gum margin. On completion of the second course of therapy, all clinical activity had disappeared. The lesions on the left cheek and the bridge of the nose were replaced by thin white scar tissue. The lesion on the right cheek still showed a few dilated follicles at its centre but no other activity.

Result 13/4/47. Markedly improved.

S.O. All trace of the lesion on the right cheek had disappeared and well defined scarring was present on the bridge of the nose and on the left cheek after an observation period of twenty four months.

Case 12. I.R. F. 32 years.

P.C. 15/11/46. There was an area of the disease about one inch in diameter on the left side of the forehead. This area was very erythematous, with sharply defined and slightly infiltrated borders. The centre was bright red in colour and covered with only a few silvery white scales. The lobes of both ears were slightly cyanotic and covered with very definite telangiectases.
Duration: Four years.

P.H. Measles and mumps and diphtheria as a child. Repeated attacks of tonsillitis since the age of eighteen.

F.H. Two daughters aged six and two years.

P.T. Nil.

O.I. Revealed no abnormality.

T. 4.8g Bismuth Metal.

P. There was only the very slightest improvement in the lesions at the end of the first course of treatment. Erythema was less and scaling absent but there was still slight activity on the ears. Treatment was stopped at the patient's request after sixth injection of second course.

Result 28/3/47. Slightly improved.

S.O. This patient was transferred for reinvestigation and further treatment in the cases described in Part II of the Thesis. See Case 58.

Case 13. J. McL. F. 36 years.

P.C. 25/11/46 Patient had small area about half an inch in diameter on the front of her nose. This was erythematous, non-infiltrated and the centre was covered with a few adherent thin scales.
Duration: One year.

P.H. Childhood ailments. Appendicectomy aged seventeen years. Perforated gastric ulcer aged thirty years.

F.H. Two sons and one daughter alive and well.

Case 13 (Contd.)

P.T. Nil.

O.I. Revealed no abnormality.

T. 4.8g Bismuth Metal.

P. Lesion responded gradually to treatment and on completion of the first course of treatment only a small puckered scar about a quarter of an inch remained. This appeared to be sound and inactive. Treatment was stopped after the sixth injection of her second course.

Result. 7/4/47. Cured.

S.O. On examination one year later, a small area of activity was noted around the scar. This had been present for two months. It completely disappeared after a further six injections of bismuth metal, started on 15/4/48.

Case 14. R.B. M. 31 years.

P.C. 29/11/46. There was a small area of Lupus Erythematosus Discoides on both cheeks and these were about half an inch in diameter. There was also a tiny lesion on the tip of the nose. All areas were very erythematous, non-infiltrated and had smooth shining centres in which dilated follicles were very numerous. Scaling was absent except for a single adherent scale in the tiny lesion on the nose.
Duration: Five years.

P.H. Nil.

F.H. Two sons aged six and four years alive and well.

P.T. Nil

O.I. Revealed no abnormalities.

T. 6g Bismuth Metal.

P. On completion of the first course of bismuth, all the areas showed marked improvement. The tiny lesion on the nose had disappeared completely while the lesion on the cheeks were very much paler and the dilated follicles were much less numerous. A well marked bismuth line had appeared around the lower gum. On the cheek, more than

Case 14 (Contd.)

half of the lesion had vanished. At the end of the second course of treatment, the lesions were completely quiescent. There was a brownish stain on the right cheek marking the site of the former lesion. The left cheek still showed a slightly erythematous area with occasional dilated follicles.

Result.
9/5/47 Markedly improved.

S.O. At the end of one year's observation, the clinical appearances were more or less unchanged. The patient for an unknown reason did not return subsequent to this date and was therefore classed as a defaulter.

Case 15 J.H. F 32 years.

P.C.
9/12/46 Patient presented a typical erythematous "Batswing" lesion of the disease. This did not involve the cheeks to any great extent, and was confined mainly to the bridge and the sides of the nose. There was little or no infiltration and scaling was almost absent except on the bridge of the nose. Follicles were widely dilated.
Duration: Two years.

P.H. Pneumonia aged eighteen years. Puerperal fever aged twenty five years with only child.

F.H. One daughter aged seven years alive and well.

P.T. Nil.

O.I. X-ray of chest revealed several healed and calcified Tuberculous foci in the right apex.

T. 6g. Bismuth Metal.

P. Lesions responded rapidly to treatment. At the end of the first course of injections only the small area on the bridge of the nose remained active. The lesions on the sides of the nose had gone completely. Midway through the second course of treatment, scar tissue was evident on the bridge of the nose. This spread rapidly

Case 15 (Contd.)

and on completion of treatment, no active disease was present and the lesion on the bridge of the nose had been entirely replaced by this depigmented but sound scar tissue.

Result.
20/5/47. Cured.

S.O. There was no activity in the lesions after twenty four months observation.

Case 16. M.B. F 35 years.

P.C. 13/12/46. There was a typical "Batswing" lesion present in this patient. This however was not extensive and was limited to the two sides and the bridge of the nose except for a slight spread on to the left cheek. In addition there was another area a half inch in diameter on the left side of the forehead. Both lesions had raised infiltrated borders but unexpectedly depressed yet smooth, erythematous and shining centres with well dilated follicles.
Duration: Three years.

P.H. Childhood ailments. Quinsy aged sixteen years. Repeated attacks of tonsillitis since then.

F.H. Three daughters, aged twelve, eight and six years, alive and well.

P.T. Nil.

O.I. Revealed no abnormality.

T. 6g. Bismuth Metal.

P. Response to treatment was exceptionally rapid. Midway through the first course of treatment, all activity had gone from the lesions. The area on the forehead was almost completely absent while the "batswing" lesion was much less erythematous. On completion of the first course, all infiltration had gone from the borders of the "batswing" lesion, while the area on the forehead had completely disappeared. After three or four injections in the second course, the lesions could be classed as clinically cured, having disappeared without

Case 16 (Contd.)

a trace of the scarring, which was expected as the disease had been present for three years. Treatment was continued until completion.

Result 23/5/47. Cured.

S.O. On observation, fifteen months after cessation of treatment, definite fresh activity was noticed on the bridge of the nose. This had been present for about one month. A further ten week course of bismuth therapy once again stopped all activity. The case however was considered as one of relapse.

Case 17. S.McF. F. 23 years.

P.C. 23/12/46 On both cheeks, there was an area of the disease about one inch in diameter. Both of these presented the nodular type of lesion with deep seated infiltration The surface was slightly cyanotic and covered with multiple telangiectases.
Duration: Six months.

P.H. Nervous depression age twenty one years.

F.H. Nil.

P.T. Nil.

O.I. Revealed no abnormality.

T. 6gm. Bismuth Metal.

P. Lesions responded very well to treatment. At the end of the first course of treatment, most of the deep infiltration had gone and the surface had regained its normal erythematous colour. The latter was noted as the first change in the areas to treatment. On completion of treatment, all infiltration of the lesions had disappeared and the only traces of the disease were a few telangiectases.

Result 2/6/47. Cured.

S.O. There was no change in telangiectases and no evidence of reactivity after twenty four months observation.

Case 18. W.B. M. 31 years.

P.C. 27/12/46. There was extensive involvement of both cheeks, frontal region of the scalp and both index fingers. All areas showed very definite infiltration and a peculiar cyanotic erythema. Scaling was slight but dilatation of the follicles was very marked.
Duration: Eight years.

P.H. Appendicectomy aged twenty six years. Tuberculous glands incised in right side of neck aged twelve years. Had subsequent trouble with them for three years. Right side of neck badly scarred and shotty glands easily palpable.

F.H. Two sons aged nine and six years.

P.T. Nil.

O.I. Revealed no abnormality.

T. 6g. Bismuth Metal.

P. Although a very definite bismuth line was present at the end of the first course of treatment, little response in the lesions was noted. A second course of injections failed to produce any further change.

Result 6/6/47 No change.

Case 19. J.W. M. 30 years.

P.C. 10/1/47. Very active areas of the disease were present on both cheeks and both temples. The lesions on the cheeks were about one inch in diameter and circular in shape while the areas on the temples were quadrangular and measured approximately two inches by three quarters of an inch. The borders of all the areas were very erythematous and infiltrated. The centres were depressed, cyanotic in colour and covered with widely dilated follicles and a few adherent silvery scales.
Duration: Four years.

P.H. Nil.

F.H. Two brothers and three sisters alive and well.

Case 19 (Contd.)

P.T. Nil.

O.I. Revealed no abnormalities.

T. 4.2g. Bismuth Metal.

P. Treatment with bismuth was stopped at the patients request after the fourth injection of the second course. No change had been produced in the clinical appearance of the lesions.

Result 9/5/47. No change.

S.O. The patient was subsequently transferred to the series of cases in Part 11 of the Thesis for further investigation and treatment. See Case 34.

Case 20. S.R. F. 28 years.

P.C. 17/1/47. A small area of Lupus Erythematosus Discoides about the size of a sixpenny piece was present on the bulb of the nose. The area was bright red in colour, slightly infiltrated and the centre was covered with an adherent yellowish greasy scale.
Duration Eighteen months.

P.H. Childhood ailments. Tonsillitis aged twenty six years.

F.H. Nil.

P.T. Nil

O.I. Revealed no abnormality.

T. 3g. Bismuth Metal.

P. The small lesion responded rapidly to treatment. All erythema faded after a few injections. The central scaling ceased and in its place, scar formation took place. On completion of the first course of treatment, the lesion had been replaced by a small depigmented slightly depressed scar at the tip of the nose. Treatment was refused by the patient at this point.

Case 20 (Contd.)

Result
21/3/47 Cured.

S.O. The scar was sound and no fresh activity was evident after twenty seven months of observation.

Case 21. J.McQ. F. 57 years.

24/1/47. This case was transferred from the Mapharside series For clinical appearance of the lesions and history of patient, see Case 8 in that series.

T. 6g. Bismuth Metal.

P. Scaling soon disappeared on lesions which had recurred between the end of Mapharside treatment and the beginning of bismuth therapy. Erythema rapidly lessened in intensity and by the end of the first course of treatment, all infiltration had disappeared from the edges of the patches and a fairly large area of scar tissue was present on the left cheek on completion of bismuth therapy. All trace of activity had also gone from the lesions. A very marked bismuth line was present from midway through the course, but the patient experienced no other upset. On the left cheek, the lesion had been replaced by a large area of thin, white sound scar tissue. The lesion on the right cheek had left a dark brown stain with only a tiny area of depigmented scar tissue in the centre.

Result.
4/7/47. Cured.

S.O. All pigmentation had disappeared from right cheek. Scar tissue remained sound with no evidence of reactivity twenty three months later.

Case 22 J.D. F. 32 years.

24/1/47 . This case developed an arsenical dermatitis following Mapharside injections and when the dermatitis cleared, it was transferred for bismuth treatment. For the clinical appearances of the lesions and history of the patient, see Case 28 in the Mapharside series.

Case 22 (Contd.)

T. 6g. Bismuth Metal.

P. The lesion on the scalp showed an early response to treatment and scar tissue appeared to be invading from the borders which soon lost all their infiltration. The areas on the cheeks ceased to scale and the borders became less raised and less erythematous. On completion of first course of treatment, all lesions were progressing favourably. At the end of the second course of treatment, the disease could be classed as clinically cured. The scalp lesion was entirely replaced by sound white scar tissue with no trace of the disease. A similar picture was present on the right cheek while on the left cheek, only a very faint erythema and fine scaling remained.

Result 4/7/47. Cured.

S.O. The lesion on the left cheek had completely disappeared while the scar tissue on the right cheek and scalp was sound and healthy after twenty three months observation.

Case 23. W.H. M 32 years.

24/1/47. This case was previously treated as Case 26 in the Mapharside series. For clinical appearance and history of the patient see Case 26 in that series.

T. 6g. Bismuth Metal.

P. On completion of two full courses of bismuth injections the only differences to be noted were a lessening of the scaling on the lobes of the ears and slight diminution of their cyanotic colour. The scalp lesion remained unchanged.

Result 4/7/47. Slightly improved.

Case 24. T.H. M 32 years.

31/1/47. This case had failed to respond to Mapharside injections and for clinical appearance see Case 37 in that series. In addition to the lesions described therein, two small areas appeared on the forehead. These had the typical raised infiltrated borders and depressed centres,

Case 24 (Contd.)

covered with greasy yellowish scales.

T. 6g. Bismuth Metal.

P. After two full courses of Bismuth Metal, there was no appreciable change in any of the lesions.

Result.
11/7/47. No change.

Case 25. M.F. F. 29 years.

7/2/47 This patient had only showed slight improvement in the clinical lesions after 1200mgm Mapharside, and so she was transferred to this series for bismuth injections. For description of the clinical lesion and history of the patient, see Case 42 in the Mapharside series.

T. 6g Bismuth Metal.

P. Two complete courses of Bismuth Metal produced no change in the clinical appearance of the lesions.

Result
18/7/47. No change.

The remaining 5 cases are those obtained from the record files, and the history, clinical description and records of treatment are detailed in a slightly different way from the foregoing cases treated by the writer.

Case 26. R.T. F. 38.years.

P.C. Large circular area of typical Lupus Erythematosus Discoides involving bulb of nose.
Duration: Two years.
No data of other investigations available.

T. 4.6g Bismuth Metal.

P. After first course of 15 injections each of 0.2g Bismuth Metal, the lesion was reported as being greatly improved and on completion of second course of 8 injections each

Case 26 (Contd.)

of 0.2g Bismuth Metal, the lesion was reported as almost well.

Result. Markedly improved.

S.O. Subsequent observation of the case was carried out at irregular intervals. The last report 26 months after cessation of treatment reported the lesion as showing no activity and almost completely scarred.

Case 27. A.C. F. 42 years.

P.C. Typical erythematous lesions of Lupus Erythematosus Discoides were present on left cheek and nose. There were three lesions on the cheek and two small areas on the nose. All showed very dilated follicles.
Duration: Seven years. Other results of investigations were not recorded except that there was no history or evidence of Tuberculosis.

T. 4g Bismuth Metal.

P. Two courses of bismuth injections each consisting of ten injections of 0.2g Bismuth Metal produced no change in the clinical appearance of the lesions.

Result No change.

S.O. The patient was subsequently treated by other methods of therapy irrelevant to this series of cases.

Case 28. J.F. F. 36 years.

P.C. Large area of Lupus Erythematosus Discoides involved the right temporal region of the scalp. This showed extensive scarring and loss of hair. Small lesions of the disease were also present on both cheeks.
Duration: Five years. Other investigations were not recorded except X-ray of chest which was negative.

T. 6g Bismuth Metal.

P. The patient received three courses of Bismuth Metal each consisting of ten injections of 0.2g with six weeks rest between each course. At the end of each course only a slight change was evident in the lesion. A final report

Case 28 (Contd.)

is made six months after cessation of treatment that the lesions on the cheek show slight improvement but that the scalp is unchanged.

Result. Slightly improved.

Case 29. A.S. F 29 years.

P.C. Small area of the disease about the size of a florin on the right cheek.
Duration: One year.
Other investigations showed signs of a very poor peripheral circulation. No evidence of Bazin's disease or other Tuberculous connections was found.

T. 3g. Bismuth Metal.

P. At the end of a course of fifteen injections each of 0.2g Bismuth Metal, all trace of the lesion had completely disappeared with no trace of scar formation.

S.O. Follow-up was very irregular but a report twenty eight months after cessation of treatment showed that there had been no recurrence of the disease and patient was discharged as cured.

Case 30. T.W. M. 30 years.

P.C. Typical widespread "batswing" lesion of Lupus Erythematosus Discoides present. Edges were very erythematous and hard.
Duration: Three years.
Patient had a history of Pulmonary Tuberculosis aged seventeen years and was two years in a sanitorium, then discharged as cured. X-ray of chest was not reported.

T. 4g Bismuth Metal.

P. At the end of the first course of treatment, 2g Bismuth Metal had been given and the lesion was reported as very

Case 30 (Contd.)

much better. On completion of treatment, the patient was almost well and the lesion, according to the report had been replaced in areas by depigmented scar tissue.

S.O. The patient was observed at four monthly intervals for almost three years. Last observation was that the lesion was completely inactive and largely replaced by fine scar tissue.

It must be noted here that although a considerably larger number of cases were recorded, only these 5 were selected, as in the other cases, the records were very incomplete and indecisive as to the results of treatment.

APPENDIX.

PART II.

APPENDIX II.

In the following pages, the 74 cases of Lupus Erythematosus Discoides discussed in Part II of the Thesis will be described in detail. Before this description of the 74 cases is given, the abbreviations used in the text must be explained.

P.C. Present Condition.

P.H. Previous History.

F.H. Family History.

P.T. Previous Treatment.

X-ray This includes the results of X-ray of chest, sinuses and teeth if the latter were done.

Throat and Mouth Examination. This includes clinical examination of mouth and throat and bacteriological examination of a throat swab, and gum swab if necessary.

W.B.C. This includes all the white blood cell counts and the differential countd.

B.S.R. This is a report of the blood sedimentation rate (1) before (2) during and (3) after treatment. The figures which will be given indicate the fall in millimetres in one hour.

M.R. Mantoux reaction.

W.R. Wasserman reaction. These were negative in all patients except Case 41 when a doubtful reaction was obtained.

O.R. Ointment reaction i.e. the ointment to which the patch of Lupus Erythematosus Discoides reacted.

T. Treatment.

P. Progress, during treatment.

Result. Result of treatment.

S.O. Subsequent observation.

The four months interval between the last case in Part 1 of the Thesis and the first case in Part 11, is due to an illness of the writer. During this period, all cases of Lupus Erythematosus Discoides were reserved for him by his colleagues. Thus the first eighteen cases in Part 11 of the Thesis have approximately the same date of starting investigation and treatment.

Case 1 M.L. F 25 years.

P.C. 5/6/47. There were numerous circular and oval lesions of Lupus Erythematosus Discoides on the nose, forehead and both cheeks. The borders were raised, infiltrated and very erythematous. The centres were depressed and covered with thick adherent yellowish scales.
Seborrhoeic lesion.
Duration: Three years.

P.H. Childhood ailments. Chilblains negative, injury negative Sunlight sensitivity positive.

F.H. Two sisters alive and well.

P.T. Nil.

X-ray. Chest. Several calcified Tuberculous glands present on the left hilum. No evidence of recent activity.
Sinuses: Negative.

Mouth and Throat. Healthy. Throat swabs negative,

W.B.C. All within normal limits.

B.S.R. (1) 14, (2) 10, (3) 4.

M.R. 1/10,000 positive.

O.R. Slight to Streptococcus Pyogenes.

T. Sulphatriad 1G four times a day for alternate five day periods.

P. Lesions responded slowly to treatment but there was a gradual lessening of the infiltration of the borders and diminution of scaling. After four months treatment, several of the lesions had completely disappeared and one large lesion on the forehead showed the formation of scar tissue in the centre. Treatment was completed and by then all trace of activity had disappeared and all but one lesion on the forehead and another on the nose had vanished. In these two latter lesions, the sites of the disease had been replaced by sound but depigmented scar tissue.

Result 12/12/47. Cured.

Case 1 (Contd.)

S.O. The lesions remained unchanged and completely inactive after eighteen months of observation.

Case 2. J.N. F 57 years.

P.C. 5/6/47 The patient had multiple patches of the disease on cheeks, nose and forehead. All lesions were brightly erythematous with well defined but only slightly infiltrated borders. The centres were covered with widely dilated follicles and were smooth and glistening. Erythematous lesion. Duration: Three years.

P.H. Scarlet fever as a child. Tuberculous glands right side of neck aged twelve years. Chilblains both heels. Injury negative, Sunlight sensitivity negative.

F.H. Two sons and one daughter alive and well.

P.T. Nil.

X-ray. Chest: A calcified Tuberculous focus is present in right apex. No evidence of recent activity present. Sinuses: There is diminished translucency of the right antrum consistent with chronic sinusitis.

Mouth and Throat. Healthy. Throat swab: Streptococcus Viridans cultured. Sinus lavage, yielded growth of Staphylococcus albus, but operation was very painful and followed by headache and malaise.

W.B.C. First W.B.C. was 3,800per c.m.m. All subsequent counts and all differential counts were within normal limits.

B.S.R. (1) 24, (2) 18, (3) 12.

M.R. 1/10,000 positive.

O.R. Definite to Streptococcal Pyogenes. Slight to Tubercle.

T. Calciferol 150,000 I.U. daily. Sulphatriad 1G q.i.d.

P. There was absolutely no change in the clinical appearance of the lesions after three months treatment with Calciferol.

Case 2 (Contd.)

Sulphatriad brought about a rapid improvement in the lesions. After two months treatment, several of the cheek lesions had disappeared. After four months treatment, all lesions were inactive and only a large lesion on the left cheek and a small lesion on the nose remained. Treatment was completed and scarring was well advanced in the cheek lesion.

Result 26/2/48 Markedly improved.

S.O. There had been considerable extension of the scar tissue on the forehead. The nasal lesion remained unchanged after fifteen months observation.

Case 3 J.H. F. 36 years.

P.C. 5/6/47. There were several areas of Lupus Erythematosus Discoides on the forehead and chin. The borders of these patches were raised, infiltrated and very erythematous. The centres of the lesions were covered with thick adherent silvery scales. Dilated follicles were prominent. The inside of both ears showed extensive involvement and in these regions, the erythema was very intense and the scaling so profuse that crusts were formed. The ears were painful and tender to the touch.
Seborrhoeic lesions.
Duration: Eighteen years.

P.H. Measles, whooping cough, diphtheria in childhood. Tuberculous glands in left side of neck while at school. Required incision and old scar of this operation is prominent in neck. Shotty glands palpable. Chilblains negative, injury negative, sunlight sentisivity positive.

F.H. Two sons alive and well. Two brothers alive and well.

P.T. Nil.

X-ray. Sinus: There was diminished translucency of the left antrum consistent with chronic sinusitis.

Mouth and Throat. Healthy. Throat swab: Negative. Sinus lavage yielded

Case 3 (Contd.)

growth of Mixed Staphylococcus. It was very painful however and followed by severe headache.

W.B.C. All counts were within normal limits.

B.S.R. (1) 25, (2) 26.

M.R. 1/10,000 positive.

O.R. Definite to Tubercle.

T. Calciferol 150,000 I.U. daily.

P. After twelve weeks treatment, there was no change in the clinical appearance of the lesions. Blood urea was equal to 30mgm per 100 m.l. Serum Calcium 10.3mgm per 100m.l.

Result 3/10/47 No change.

S.O. The patient was subsequently treated by methods irrelevant to this Thesis.

Case 4. E.S. F 35 years.

5/6/47. This case had been treated previously with Mapharside without success and was then transferred for further investigation and treatment to the present series of cases. For P.C., P.H., F.H., P.T., and X-ray, see Case 48 in Part 1.
Seborrhoeic lesions.
Duration: Four years.

P.H. Chilblains, heels. Injury, negative. Sunlight sensitivity positive.

Mouth and Throat. Healthy. Throat swab; Negative.

W.B.C. All counts were within normal limits.

B.S.R. (1) 35, (2) 38.

M.R. 1/10,000 positive.

O.R. Definite to Tubercle.

Case 4 (Contd.)

T. Calciferol 150,000 I.U. daily.

P. On completion of treatment lasting three months with Calciferol, there was no change in the clinical appearance of the lesions

Result.
3/10/47. No change.

S.O. The case was later treated by experimental methods irrelevant to this Thesis.

Case 5 M.D. F. 25 years.

5/6/47. This case was treated unsuccessfully with 1200mgm Mapharside in Part 1 of this work. For P.C., P.H., P.T., and X-ray See Case 40 in that series of cases.
Erythematous lesion.
Duration: Four years.

P.H. Chilblains negative, injury negative, sunlight sensitivity positive.

Mouth and Throat Tonsils were large and appeared to be definitely septic.
Throat swab: Streptococcus Viridans cultured.
Sinus wash out yielded growth of Staphylococcus Aureas.
It was a very painful operation and headaache followed.

W.B.C. Second white blood cell count was 3,400 per c.m.m. All other counts and all differential counts were within normal limits.

B.S.R. (1) 6, (2) 3, (3) 3.

M.R. 1/10,000 Negative. 1/1000 positive.

O.R. No reaction to any ointment.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Response to treatment was rapid in all six areas. During first three courses of tablets, the erythema in the lesions became intense and there was a slight burning in all areas. During the no-tablet days, the erythema rapidly subsided. This reaction only occurred during the first three courses

Case 5 (Contd.)

After four months, all activity had gone from the lesions and those on the neck and forehead had completely disappeared. The nose showed evidence of scar formation. Treatment was continued at 0.5G Sulphatriad q.i.d. for the next two months.

Result. 26/12/47. Cured

S.O. There was no reactivity in the lesions after eighteen months observation.

Case 6. J.J. M. 33 years.

P.C. 5/6/47 Patient had an area of Lupus Erythematosus Discoides one inch in diameter on left cheek. The borders were elevated, indurated and very erythematous. The centre was depressed, covered with adherent silvery scales and showed many dilated follicles. On the lobe of the left ear, a small but heavily crusted lesion of the disease was present.
Seborrhoeic lesion.
Duration: Three months.

P.H. Childhood ailments. Pneumonia aged eighteen years. Repeated attacks of Tonsillitis from age of twenty years. Chilblains negative, injury negative, sunlight sensitivity negative.

F.H. One brother and three sisters alive and well. One brother died from pneumonia.

P.T. Nil.

X-ray. Chest. Right costo-phrenic angle obliterated by pleural adhesions. There is also a healed Tuberculous focus in right lower lobe.
Sinuses: Negative.

Guinea-pig innoculated. No evidence of Tuberculosis found at post mortem three months later.

Mouth and Throat. Tonsils large and inflamed. Throat swab: negative.

Case 6 (Contd.)

W.B.C. Second white blood count was 9,600 per c.m.m. All other counts and all differential counts were within normal limits.

B.S.R. (1) 7, (2) 9.

M.R. 1/10,000 positive.

O.R. Slight to Mixed Streptococcus,

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. After three months treatment, there was no change in the clinical appearance of the lesions. At this time the patient complained of cough, pain in right shoulder region and lack of energy. Examination revealed dullness to percussion and fine crepitations on auscultation. An X-ray of chest showed a definite Tuberculous infiltration just above the right clavicle. A diagnosis of Acute Pulmonary Tuberculosis was made and the patient was transferred to a public health clinic.

Result 26/9/47 No change.

Case 7. M.R. F 45 years.

P.C. 7/6/47 Patient had an erythematous area of Lupus Erythematosus Discoides on the left temple. The patch was about one inch by half an inch. The borders were sharply defined and only slightly infiltrated. The centre was smooth shining and very erythematous and showed many dilated follicles. A similar but circular area about one inch in diameter was present on right cheek.
Erythematous lesion.
Duration: Six months.

P.H. Childhood ailments. Rheumatic fever aged twenty three years. No heart lesion evident. Chilblains - toes and heels, injury negative, sunlight sensitivity negative.

F.H. Two daughters and one son alive and well. Husband died heart disease aged forty eight years.

P.T. Nil.

X-ray. Chest and sinuses negative.

Case 7 (Contd.)

Mouth and Throat.	Healthy. Throat swab: Streptococcus Viridans cultured.
W.B.C.	All counts were within normal limits.
B.S.R.	(1) 25, (2) 22.
M.R.	1/10,000 negative, 1/1000 positive.
O.R.	No reaction to any of the ointments.
T.	Sulphatriad 1G q.i.d. for alternate five day periods.
P.	On first course of tablets, the lesions became hot and irritable but this immediately settled during the first interval period only to return to a lesser degree during the second course. Slight irritation was also present during the third course of tablets and in this interval period, the lesions appeared to be slightly paler than at the start of treatment. The patient did not return for observation after the fourth interval period.
Result. 22/8/47	Slightly improved.

Case 8. F.J. F. 32 years.

P.C. 7/6/47.	The patient had two oval deep seated, nodular, infiltrated areas of Lupus Erythematosus Discoides on the left side of the forehead. They measured half an inch by three quarters of an inch and the surface of these was covered with dilated follicles. A minute lesion covered by a tiny adherent spicule was present on the bulb of the nose. Nodular lesion. Duration: Six weeks.
P.H.	Childhood ailments. Mastoidectomy aged eight years. One miscarriage aged twenty three years. Chilblains negative, injury negative, sunlight sensitivity, negative.
F.H.	Two sons alive and well.
P.T.	Nil.
X-ray.	Chest. Several calcified Tuberculous lesions present

Case 8 (Contd.)

in right apex. Sinus, clear. Teeth: caries in left and right lower molars. Gums spongy and inflamed.

Mouth and Throat — Wall of pharnyx slightly inflamed and injected. Throat swab: Positive for Haemolytic Streptococcus.

W.B.C. — All counts within normal limits.

B.S.R. — (1) 24, (2) 16, (3) 6.

M.R. — 1/10,000 positive.

O.R. — Definite with Mixed Streptococcus.

T. — Sulphatriad 1G q.i.d. for alternate five day periods.

P. — Lesions responded rapidly to treatment and within two months, all trace of lesions had gone except for a small area of atrophy on left side of forehead. Skin was slightly depigmented. Treatment was stopped at the patient's request.

Result 5/9/47 — Cured.

S.O. — No sign of recurrence of lesions after twenty months of observation.

Case 9. A.B. F. 39 years.

P.C. 7/6/47. — A typical "batswing" lesion of the disease involved both sides of the nose and the bridge also. There was only slight induration of the borders and the centre was bright red in colour, smooth and showed widely dilated follicles. There were two small areas on the left cheek. These again showed only slight infiltration and absence of scaling.
Erythematous lesion.
Duration: Seven years.

P.H. — Measles and Scarlet Fever in childhood. Pneumonia aged nine years. Tuberculous glands in right side of neck aged fourteen years. Incision scar present in right anterior triangle. Chilblains - both heels, injury , sunburn , sunlight sensitivity, positive.

Case 9 (Contd.)

F.H. Two daughters, one son alive and well.

P.T. Six months very irregular sulphonamide therapy in 1943.

X-RAY Chest and sinuses: Negative.

Mouth and Throat. Healthy. Throat swab: Negative.

W.B.C. All counts within normal limits.

B.S.R. (1) 7, (2) 7, (3) 4.

M.R. 1/10,000 Positive.

O.R. No reaction occurred with any of the ointments.

T. Calciferol 150,000 I.U. daily.
Mapharside 1200mgms.

P. After a three months course of Calciferol there was no change in the appearance of the lesions and so the patient was given the usual two courses of Mapharside. Response to treatment was at first very gradual. During the second course however, a much more rapid response was obtained and by completion of this course both cheek lesions had disappeared completely. On the bridge of the nose, there was definite depigmented but sound scar tissue. The left side showed dilated follicles.

Result 20/2/48. Markedly improved.

S.O. All activity had gone from the nose and only smooth white scar tissue remained on the bridge of the nose and slightly down each side, after fifteen months observation.

Case 10. W.O. M. 38 years.

P.C. 7/6/47 The patient had multiple scattered areas of Lupus Erythematosus Discoides on the forehead, both cheeks, chin and lobes of ears. These areas varied in size and shape. All had very infiltrated, dull erythematous and raised borders. The centres were depressed and

Case 10 (Contd.)

covered with adherent yellowish scales.
Seborrhoeic lesions.
Duration: Eight years.

P.H. Mumps, measles and scarlet fever as a child. Chilblains fingers of both hands. Injury: Frostbite, sunlight sensitivity, negative.

F.H. Nil.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Guinea-pig innoculated: No evidence of Tuberculosis found at post mortem three months later.

Mouth and Throat. Healthy. Throat swab - negative.

W.B.C. All counts within normal limits.

B.S.R. (1) 14, (2) 18, (3) 8.

M.R. 1/10,000 positive.

O.R. Very definite reaction with Tubercle. The reaction was very severe. B.S.R.was definitely increased, 58 in 1 hour.

T. Calciferol 150,000 I.U. daily. Mapharside 1200mgms.

P. Calciferol therapy was stopped after the fourth week as the disease had definitely deteriorated. Fresh erythematous lesions had appeared on chin and forehead, and original lesionsin the forehead were weeping slightly. B.S.R. 62 m.m.s Mapharside was then given with an excellent response. After eight weeks the lesions were much better. B.S.R. was 18 mm in one hour. On completion of first course, many of the lesions on forehead and chin were starting to scar. The fresh lesions had disappeared. On completion of second course of Mapharside, all activity had ceased and lesions on forehead and chin as well as the ears were completely replaced by sound scar tissue. Cheeks showed slightly dilated follicles.

Result 20/2/48. Markedly improved.

S.O. There was no fresh activity, and scars remained sound

Case 10 (Contd.)

after eighteen months observation.

Case 11. H. McA. M. 42 years.

P.C. 7/6/47 — There was an area of the disease about one and a half inches in diameter on the left cheek. In addition, there were two small areas on the left side of the neck. The borders of all areas were very erythematous and infiltrated and the centre was depressed and covered with fairly thick adherent greasy yellowish scales. Seborrhoeic lesion. Duration: Two and a half years.

P.H. — Childhood ailments. Tonsillectomy aged fifteen years. Gonorrhoea aged nineteen years. Tuberculous glands in right side of neck aged eleven years. These required incision and draining. Chilblains negative, injury negative, sunlight sensitivity negative.

F.H. — Three sons alive and well.

P.T. — Nil.

X-ray. — Chest: There was a calcified ghon focus in the right lower lung and calcified Tuberculous glands in the right hilum. Sinuses: Clear.

Guinea pig innoculated. No evidence of Tuberculosis was found at post mortem examination, three months later.

Prostatic smear and Gonorrhoea Complement Fixation Test: Negative.

Mouth and Throat. — Healthy: Throat swab negative.

W.B.C. — Second white blood cell count was only 3,200 per c.m.m. while that after second week of ointment application was 9,400 per c.m.m. All other counts were between 6,000 and 7,500 per c.m.m. All differential films appeared to be normal.

B.S.R. — (1) 24, (3) 5.

M.R. — 1/100,000 positive.

Case 11 (Contd.)

O.R. On application of the Tubercle ointment to the lesion on the cheek, there was an immediate improvement, and even after one week, part of the lesion showed evidence of scar formation. On application of the Tubercle ointment to the other areas, a similar result occurred. In six weeks, all areas had been replaced by sound scar tissue. This healing property appeared to be confined to one ointment only, namely the Tubercle. The application of other ointments caused no change in the lesions.

Result 23/8/47. Cured.

S.O. Scar tissue remained completely sound after twenty one months of observation.

Case 12. R.M. F. 31 years.

P.C. 7/6/47. There were two lesions of Lupus Erythematosus Discoides on the right cheek. These were about one inch in diameter. They had sharply defined but only slightly infiltrated edges and their centres were smooth, bright red and covered with a very thin adherent silvery scale, on removal of which widely dilated follicles were easily seen.
Erythematous lesion.
Duration six weeks.

P.H. Childhood ailments only. Chilblains negative, injury negative, sunlight sensitivity positive.

F.H. Five children alive and well.

P.T. Nil.

X-ray. Chest and Sinuses: Normal. Teeth: Second left molar carious.

Mouth and Throat. Throat swab positive, - Haemolytic Streptococcus, Teeth were very carious and gums were spongy and bled easily. Breath was foul - gum swab positive, for Vincents Spirillae and bacilli.

W.B.C. Second white blood cell count was 9,800 per c.m.m. All other counts and all differential counts were within

Case 12 (Contd.)-

normal limits.

B.S.R. (1) 15, (2) 10, (3) 6.

M.R. 1/100,000 negative. 1/10,000 positive.

O.R. There was no reaction to any of the ointments.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesions responded rapidly to treatment and upper lesion on the cheek showed marked improvement after two courses of Sulphonamides. The erythema had lessened and scaling had ceased . By the sixth week, only a brownish stain marked the site of the lesion. The lower lesion still showed slight activity but this gradually settled and by the fourth month had gone except for a few dilated follicles. On completion of treatment, all activity had gone but dilated follicles still remained with the brown pigmentation.

Result.
2/1/48 Markedly improved.

S.O. There was no change in the lesions after eighteen months of observation.

Case 13. H.W. M. 45 years.

P.C.
12/6/47. Two large kidney shaped areas about two and a half inches by one inch of Lupus Erythematosus Discoides were present on either temporal region. The edges of the areas were infiltrated, raised and a dull cyanotic erythema in colour. The exact centre of both patches showed scar formation, while the rest of the centres were covered with thick adherent yellowish scaling. A small similar area of the disease was present on the bridge of the nose and two further areas about one inch in diameter were situated on the back of the neck. All areas were tender to the touch and painful on pressure.
Seborrhoeic lesion.
Duration: Three years.

P.H. Pneumonia aged twenty two years. Chilblains negative, injury negative, sunlight sensitivity negative.

Case 13 (Contd.)

F.H. One son alive and well aged twelve years. One son aged ten years has Tuberculous infection of right knee joint. Sister of patient had Tuberculous glands while at school.

P.T. Nil.

X-ray. Chest and Sinuses: Normal. Teeth: Lower incisors show evidence of caries.

Guinea-pig innoculated: No evidence of Tuberculosis found at post mortem, three months later.

Mouth and Throat: Healthy. Throat swab: negative. Gum swab: Vincents Spirillae and Bacilli. Gums very spongy and bleed easily, and occasionally spontaneously. Breath foul.

W.B.C. All counts were within normal limits.

B.S.R. (1) 46, (3) 42.

M.R. 1/100,000 positive.

O.R. Slight to Tubercle.

T. Calciferol 150,000 I.U. daily. Mapharside 1200mgms.

P. There was no decisive change present in any of the lesions after full courses of Calciferol and Mapharside.

Result 3/3/48. No change.

Case 14. H.D. F. 21 years.

P.C. 12/6/47. On the right cheek, there was a large circular area of the disease. This was one and a half inches in diameter and had raised infiltrated edges. The centre was covered with thick yellow crusted scales and on removal of these, a very erythematous base with widely dilated follicles was seen. A small area about half an inch with similar scaling and showing a definite active, infiltrated edge, was present on the left temple.
Seborrhoeic lesion.
Duration: Three years.

Case 14 (Contd.)

P.H.	Childhood ailments. Tuberculous glands in right side of neck while at school. These required incision and drainage. Chilblains - both heels and toes. Injury, sunburn, sunlight sensitivity positive.
F.H.	Two sisters and one brother alive and well.
P.T.	Three months Sulphonamide 1945, but no change in lesions.
X-ray	Chest and Sinuses: Normal.
Mouth and Throat.	Healthy. Throat swab: Negative. Teeth carious and gums pale, sodden and very unhealthy. Breath foul. Gum swab: Fusiform bacilli and Streptococcus Viridans on culture.
W.B.C.	All counts are within normal limits.
B.R.S.	(1) 17, (2) 12, (3) 6.
M.R.	1/100,000 Negative. 1/10,000 Positive.
O.R.	Slight to Streptococcus Pyogenes but a more definite reaction to Tubercle ointment, two weeks after previous reaction had settled.
T.	Calciferol 150,000 I.U. daily. Mapharside 900mgms.
P.	There was no change in the lesions after three months Calciferol treatment and so Mapharside therapy was started and after five injections, a very definite improvement was apparent. On completion of first course of treatment, the lesion on the left temple had completely disappeared. All infiltration had gone from the other lesion and scaling had ceased. In centre of the lesion, a small area of scar tissue was present. After five injections of the second course, treatment was stopped at the patient's request as all trace of the lesion had disappeared except a small smooth white scar at the centre of the site of the lesion.
Result 18/2/48	Cured.
S.O.	There was no change in the scar and no fresh activity after fifteen months of observation.

Case 15. C.D. F. 37 years.

P.C. 12/6/47. This case had been previously treated with Mapharside without effect on the lesions. See Case 6 in that series for P.C., P.H., F.H., P.T., and X-ray.
Erythematous lesion.
Duration: Eleven years.

P.H. Chilblains negative, injury negative, sunlight sensitivity positive.

Mouth and Throat. Tonsils were enlarged and inflamed. Throat Swab:Positive for Haemolytic Streptococci.

W.B.C. All were within normal limits.

B.S.R. (1) 15, (2) 12, (3) 8.

M.R. 1/100,000 negative, 1/10,000 negative, 1/1000 positive.

O.R. Definite reaction to Mixed Streptococcus. B.S.R. rose to 24 m.m. in one hour.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesions steadily progressed under treatment. On each occasion of taking tablets lesions became fiery red and there was slight irritation but no general constitutional upset. This reaction rapidly subsided on stopping tablets and gradually lessened with each course. By the end of four months, the lesion on the nose had disappeared except for a small area of scar formation. The lesion on the scalp showed definite scar tissue in the centre. Treatment was continued with ½G Sulphatriad for another two months. Scar tissue on scalp gradually extended and all activity ceased. Telangiectasia however remained.

Result. 8/1/48. Markedly improved.

S.O. Nose lesion remained inactive and scar tissue in the scalp had spread over almost the whole lesion after fifteen months observation.

Case 16. J.T. M. 46 years.

P.C. 12/6/47 There were scattered areas of the disease on both cheeks

Case 16 (Contd.)

nose and chin. These areas varied in size and shape and were bright red in colour with sharply defined non-infiltrated edges. Centres were smooth and showed dilated follicles. Scaling was almost entirely absent.
Erythematous lesion.
Duration: Ten years.

P.H. Childhood ailments. Acute Chilblains, negative. Injury, sunburn. Sunlight sensitivity positive. Urinary Porphyrins - normal.

F.H. One daughter alive and well.

P.T. Nil.

X-ray Chest and Sinuses: Negative.

Guinea-pig Innoculated: No evidence of Tuberculosis was found at post mortem examination three months later.

Mouth and Throat. Throat swab: Streptococcus Viridans cultured.

W.B.C. First white blood cell count was only 3,200 per c.m.m. and after the sixth week of treatment was 3,400 per c.m.m. All other counts were between 6,800 and 7,200 per c.m.m. Differential counts were all normal.

B.S.R. (1) 3, (2) 4, (3) 2.

M.R. 1/100,000 negative, 1/10,000 negative, 1/1,000 positive.

O.R. Slight with Mixed Streptococcus.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Response to treatment after two months was rapid and after this time, all erythema had greatly faded. The common flare-up of the lesions while the patient was taking the tablets was again present. There was no constitutional upset and reaction gradually lessened with each successive course. After four months treatment, all activity had gone from the lesions, which were replaced by depigmented but sound skin which was not scarred. Treatment was completed as usual.

Result 8/1/48. Cured.

Case 16 (Contd.)

S.O. Observation of the case after fifteen months revealed no reactivity of the lesions.

Case 17. M.Y. F. 40 years.

P.C. 12/6/47. This case had previously received Mapharside therapy with little or no effect. See Case 18 in that series for P.C., P.H., F.H., P.T., and X-ray.
Seborrhoeic lesion.
Duration Twelve and a half years.

P.H. Erythrocyanosis both legs. Injury negative, sunlight sensitivity positive. Urinary Porphyrins - normal.

Mouth and Throat. Healthy. Throat Swab: Negative, Teeth carious. Gums: Pale and spongy. Breath foul . Gum swab: Culture Streptococcus Viridans . Vincents Spirillae and fusiform bacilli.

W.B.C. All were within normal limits.

B.S.R. (1) 29, (2) 28.

M.R. 1/100,000 Negative. 1/10,000 positive.

O.R. No reaction with any of the ointments.

T: Sulphatriad 1G q.i.d. for alternate five day periods.

P. After four months treatment there was only a slight diminution in scaling and erythema. Lesion however was still active.

Result 6/11/47. Slightly improved.

Case 18 S.K. F. 36 years.

P.C. 12/6/47 There was an area of the disease on the left cheek. This was about the size of a shilling and was bright red in colour. The borders were sharply defined and the dentre was smooth, shining and showed very dilated follicles with only a few adherent scales at its outer rim. There

Case 18 (Contd.)

was no infiltration of the area.
Erythematous lesion.
Duration: Eight weeks.

P.H. Childhood ailments. Repeated sore throats since age of twenty five. Rheumatic fever aged eighteen years. No heart lesion evident. Chilblains negative, injury negative, sunlight sensitivity negative.

F.H. Two sons and one daughter alive and well.

P.T. Nil.

X-ray. Chest and Sinuses - Negative.

Mouth and Throat. Tonsils were large but there was no evident sepsis. Throat swab: Positive for Haemolytic Streptococci.

W.B.C. All within normal limits.

B.S.R. (1) 5, (2) 3, (3). 3,

M.R. 1/100,000 negative. 1/10,000 positive.

O.R. Definite with Streptococcus Pyogenes.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Response to treatment was very rapid and after two months treatment, all trace of the lesion had disappeared and only a faint brown pigment remained. Treatment was continued as outlined previously for the next four months by which time, pigmentation had faded completely.

Result 8/1/48. Cured.

S.O. No recurrence had been detected after fifteen months observation.

Case 19. V.R. F. 30 years.

P.C. There were two areas of Lupus Erythematosus Discoides on the right cheek. These were about the size of a shilling piece and had red, elevated, infiltrated borders. The centres were depressed, irregular and covered with

Case 19 (Contd.)

adherent yellowish, greasy scales. A similar lesion about the size of a florin was present on the left cheek. In this lesion, the infiltration of the borders was not so great.
Seborrhoeic lesion.
Duration: Three years.

P.H. Measles, mumps and Scarlet fever in childhood. Nervous break down aged twenty four years. Chilblains - left heel, injury negative, sunlight sensitivity positive. Urinary Porphyrins normal.

F.H. One sister alive and well.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Mouth and Throat. Healthy. Throat swab: Streptococcus Viridans cultured.

W.B.C. All counts were within normal limits.

B.S.R. (1) 17, (2) 12, (3) 8.

M.R. 1/100,000 positive.

O.R. Definite with Tubercle.

T. Calciferol 150,000 I.U. daily. Mapharside 1200mgms.

P. After three weeks treatment with Calciferol the lesions had become much worse and much more active. The borders of all areas were very erythematous, scaling was profuse and the lesions were very hot and tender to the touch. A small fresh lesion had developed on the forehead. Treatment was stopped and Mapharside therapy started. There was an immediate response to these injections and after the fifth injection, the new lesion had disappeared. On completion of both courses, all activity had gone from the lesions. The area on the left cheek and the lower lesion on the right cheek were completely replaced with sound smooth but depigmented scar tissue. The upper lesion on the right cheek showed absence of scaling and no infiltration of the border, but a few dilated follicles were present on the site of the lesion.

Case 19 (Contd.)

Result 29/1/48 — Markedly improved.

S.O. — Six months after cessation of treatment, the lesion on the right cheek showed evidence of reactivity. Scaling was profuse and there was slight infiltration of the borders. Mapharside treatment was restarted on 5/8/48 and after ten injections, all scaling had ceased, and the centre of the lesion showed scar tissue formation.

Case 20. A.M. F. 29 years.

P.C. 26/6/47. — Patient had typical patches of the disease on both cheeks. These were the size of a florin and had raised, infiltrated edges with depressed, irregular scaly centres. The borders were dull red in colour and the scaling yellowish and greasy.
Seborrhoeic lesion.
Duration: Ten years.

P.H. — Tuberculous glands in right side of neck while at school. Developed Bazin's disease aged seventeen years. Last active eight years ago. Old ulceration scars on both legs. Chilblains both heels, injury, cigarette burn, sunlight sensitivity negative.

F.H. — One daughter alive and well.

P.T. — Nil.

X-ray. — Chest and Sinuses negative.

Mouth and Throat. — Healthy. Throat swab negative.

W.B.C. — All counts were within normal limits.

B.S.R. — (1) 25, (2) 12, (3) 7.

M.R. — 1/100,000 positive.

O.R. — Definite to Tubercle.

T. — Calciferol 150,000 I.U. daily.

P. — There was a rapid response to treatment, and after four

Case 20 (Contd.)

weeks the lesions had greatly improved. This was so definite that a biopsy was taken from the right cheek to exclude a diagnosis of Lupus Vulgaris. After six weeks treatment, all activity had gone from the right cheek, and only the scar of the biopsy and some pigmentation remained. The left lesion was still scaling profusely but after another six weeks on the reduced dosage of 100,000 I.U. daily, all activity had gone from this lesion and a few dilated follicles only, remained.

Result 23/10/47. Markedly improved.

S.O. There was no reactivity in either of the lesions after twenty months observation.

Case 21 W.B. M. 34 years.

P.C. 28/6/47 There was a small area of Lupus Erythematosus Discoides on the left cheek. This was about the size of a shilling and was bright red in colour with sharply defined and only slightly infiltrated edges. The centre area was smooth, shining and covered with widely dilated follicles. A few silvery adherent scales were present.
Erythematous lesion.
Duration: Six months.

P.H. Childhood ailments. Patient had Quinsy aged twenty eight years. Recurrent sore throats since then. Chilblains negative, injury negative, sunlight sensitivity negative.

F.H. Nil.

P.T. Nil.

X-ray Chest, and Sinuses - negative.

Guinea pig innoculated. Although the animal died prematurely twenty days later, there was no evidence of Tuberculous infection at the post mortem examination.

Mouth and Throat Tonsils large but did not appear to be inflamed. Throat swab was positive for Haemolytic Streptococci.

Case 21 (Contd.)

W.B.C. Third white blood cell count was 3,600 per c.m.m. All other counts were within 6,000 and 7,200 per c.m.m. The differential count was always within normal limits.

B.S.R. (1) 5, (2) 3, (3) 3.

M.R. 1/100,000 negative, 1/10,000 negative, 1/1000 positive.

O.R. Definite with Streptococcus Pyogenes. B.S.R. 11 m.m.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesions responded rapidly to treatment and after ten weeks treatment only a faint brownish pigment was present at the site of the lesion. Treatment was continued for another six weeks and then stopped at the patient's request. Only the scar of the biopsy remained.

Result 20/11/47. Cured.

S.O. There was no recurrence of the lesions after twelve months of observation. The patient did not return for further observation after this date.

Case 22 J.S. M. 36

P.C. 28/6/47. A typical "batswing" lesion of Lupus Erythematosus Discoides was present. The lesion extended on to both cheeks and over the bridge of the nose. It was bright red in colour and sharply defined. The surface was smooth and shining and showed widely dilated follicles. The borders were slightly infiltrated and covered with fine adherent silvery scales.
Erythematous lesion.
Duration: Six years.

P.H. Childhood ailments. Perforated Duodenal Ulcer aged twenty eight years. Still has occasional attacks of dyspepsia.

F.H. Three daughters and one son alive and well. One son died aged seven years from Pneumonia. Chilblain negative injury abrasion , sunlight sensitivity negative.

P.T. Nil

Case 22 (Contd.)

X-ray. Chest and Sinuses - Negative.

Guinea-pig innoculation. There was no evidence of Tuberculosis at post mortem examination three months later.

Mouth and Throat. Healthy: Throat swab: Negative. Culture grew Streptococcus Viridans.

W.B.C. Second white blood cell count was 9,600 per c.m.m. All other counts and differential examination were within normal limits.

B.S.R. (1) 15, (2) 13, (3) 9.

M.R. 1/100,000 negative, 1/10,000 positive.

O.R. Definite to Streptococcus Pyogenes.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesions responded slowly to treatment. The erythema became more intense while tablets were being taken but rapidly diminished on stopping the drug. After four months of treatment, the lesions on both cheeks had healed. The left lesion had disappeared completely while on the right cheek, scar formation had extended from the biopsy wound. The nose still showed slight activity. Dosage was reduced and continued for two months. By this time, all activity in the nose had ceased although the outline of the lesion still remained.

Result. 15/1/48. Markedly Improved.

S.O. All trace of the lesions except for scar tissue around the original biopsy scar had disappeared after eighteen months observation.

Case 23. A.McA. F. 63 years.

P.C. 3/7/47. Multiple patches of the disease were present on the forehead, cheeks, nose, chin and dorsum of the fingers of both hands. In the latter site, the lesions were violaceous in colour, sharply defined and slightly

Case 23 (Contd.)

tender to the touch. On the face, the lesions were erythematous, non-scaly and showed widely dilated follicles.
Erythematous lesions.
Duration: Ten years.

P.H. Childhood ailments. Pneumonia aged thirty six years. Chilblains - both feet. Injury negative, sunlight sensitivity positive.

F.H. Four children alive and well. One son died rheumatic heart disease aged thirty two years.

P.T. Nil.

X-ray Chest and Sinuses: Negative.

Mouth and Throat. Healthy: Throat swab: negative.

W.B.C. All within normal limits.

B.S.R. (1) 48, (3) 40.

M.R. 1/100,000 Positive.

O.R. Slight to Tubercle.

T. Calciferol 150,000 I.U. daily. Mapharside 600mgms.

P. After three months treatment with Calciferol, there was no change in the lesions. Blood urea - 46mgm per cent. Serum Calcium - 10.2mgm per cent. Mapharside injections were given but patient defaulted at the end of the first course of injections. At that time, the erythema of the lesion had diminished and tenderness had gone from the hands.

Result
8/1/48. Slightly Improved.

Case 24. J.N. F. 58 years.

P.C. 17/7/47 This case had previously been treated with 1200mgm Mapharside but with only slight improvement. For P.C., P.H., F.H., P.T., and X-ray, see Case 20 in that series.
Erythematous lesion.
Duration: Two and a half years.

Case 24 (Contd.)

P.H. Chilblains negative, injury negative, sunlight sensitivity positive.

Mouth and Throat. Tonsils were enlarged and right tonsillar gland was palpable. No visible signs of pus. Throat swab - negative for Haemolytic streptococci. Streptococcus Viridans cultured.

W.B.S. All were within normal limits.

B.S.R. (1) 26, (2) 19, (3) 8.

M.R. 1/100,000 negative, 1/10,000 negative, 1/1000 positive.

O.R. Definite with Streptococcus Pyogenes.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesions responded slowly but progressively to treatment. After four months treatment, several of the lesions on the cheek had completely disappeared. The other lesions and those on the neck, showed faint brownish pigmentation, but no evidence of activity. On the nose, there was still dilatation of the follicles and very slight scaling. Treatment was stopped at the patient's request. There had been no exascerbation of the lesions while taking Sulphatriad.

11/12/47
Result Markedly improved.

S.O. The pigmentation had gone and there was no trace of reactivity after eighteen months observation.

Case 25. M.K. F. 26 years.

P.C. 17/7/47. There were two patches of the disease on the left cheek and another area on the right cheek. All patches were about the size of a shilling piece. The borders were raised, infiltrated and bright red in colour. The surfaces of the centres were irregular and were covered with adherent yellow scales.
Seborrhoeic lesion.
Duration: Five years.

P.H. Nil. Chilblains negative, Injury, sunburn. Sunlight sensitivity, negative.

Case 25. (Contd.)

F.H. Nil.

P.T. Nil.

X-ray Chest and Sinuses: Negative.

Mouth and Throat: Healthy. Throat swab negative for Haemolytic streptococci. Streptococcus Viridans cultured.

W.B.C. All within normal limits.

B.S.R. (1) 18,, (2) 12, (3) 4.

M.R. 1/100,000 Positive.

O.R. No reaction with any of the ointments.

T. Calciferol 150,000 I.U. daily. Sulphatriad 1G q.i.d. for alternate five day periods.

P. There was no response in any of the lesions after three months treatment with Calciferol. The drug was stopped and Sulphatriad given. The response to this treatment was soon apparent. Infiltration of the borders lessened and the erythema faded. Lesions became flat and pliable. After four months treatment, the lesions on the right cheek disappeared, while those on the left cheek were represented by a small area of sound scar tissue slightly depigmented. Treatment was continued as usual for a further two months. During the first three courses of Sulphatriad, there was a local exascerbation of the lesions. This immediately settled on withdrawal of the tablets and lessened with each course.

Result 23/4/48 Cured.

S.O. No change was present in the lesions after fifteen months of observation.

Case 26. A.Y. M. 45 years.

P.C. 19/7/47. There was a single lesion one and a quarter inches in diameter on the left cheek. The border was raised, hard and very erythematous. The centre was covered

Case 26 (Contd.)

with dilated follicles and adherent scales, silvery in colour. A similar small lesion, one half inch in diameter was present above the left eyebrow. The lesions were tender to the touch.
Seborrhoeic lesion.
Duration: Two years.

P.H. Childhood ailments. Quinsy thirty years of age. Frequent sore throats. Chilblains negative, injury negative, sunlight sensitivity negative.

F.H. One son alive and well.

P.T. Nil.

X-ray Chest: Negative. Sinuses: There was diminished translucency in right antrum. This is consistent with a chronic sinusitis. Sinus lavage yielded negative results and was followed by pain and headache.

Guinea pig innoculated: There was no evidence of Tuberculosis at post mortem three months later.

Mouth and Throat. Tonsils were large and very erythematous. No obvious signs of pus present. Throat swab: negative.

W.B.C. All within normal limits.

B.S.R. (1) 22, (2) 25.

M.R. 1/100,000 negative, 1/10,000 positive.

O.R. Definite to Mixed Streptococcal. B.S.R. = 30 m.m.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. After four months treatment, there had been only a slight diminution in scaling, and a slight lessening in the erythema of the border. The lesions were still tender to the touch. During the first few courses of Sulphatriad, there was the fairly common local exascerbation of the lesions.

11/12/47.
Result. Slightly improved.

Case 27. M.M. F 49 years.

P.C. 19/7/47. There was a typical "batswing" lesion involving both cheeks and nose. This area had raised hard borders, while the centre was depressed, irregular and covered with thick yellowish white adherent scales. Over the bridge of the nose, there was an area of telangiectatic scar tissue.
Seborrhoeic lesion.
Duration: One year..

P.H. Childhood ailments, Pneumonia aged thirty two years. Chilblains negative, injury negative, sunlight sensitivity negative.

F.H. Three daughters and two sons alive and well.

P.T. Nil.

X-ray Chest and Sinuses: Negative.

Mouth and Throat. Healthy. Throat swab negative.

W.B.C. All were within normal limits.

B.S.R. (1) 21, (2) 18, (3) 7.

M.R. 1/100,000 positive.

O.R. Definite to the Tubercle ointment.

T. Calciferol 150,000 I.U. daily. Mapharside 1200mgms.

P. There was no response to Calciferol treatment. The patient experienced severe headaches and nausea after four days treatment, and the dose was reduced to 100,000 I.U. daily. The Serum Calcium and Blood Urea remained within normal limits. After three months the drug was stopped. Mapharside treatment was started and two courses each of 600mgm was given. The response of the lesions was slow at first. During the second ten injections, the scar tissue on the nose spread rapidly and soon had entirely replaced the diseased area on the left cheek and nose. The area on the right cheek disappeared with no resultant scarring.

Result. 30/4/48. Cured.

S.O. No evidence of reactivity and scar tissue remained sound

Case 27 (Contd.)

after fifteen months observation.

Case 28 C.R. F. 35 years.

P.C. 24/7/47. There was a definite area of Lupus Erythematosus Discoides involving both sides of the nose. The borders of the patch were raised, hard and erythematous, while the centre was depressed, paler in colour and covered with dilated follicles and adherent silvery scales.
Seborrhoeic lesion.
Duration: Two years.

P.H. Childhood ailments. Pneumonia aged twenty three yearss. Bazin's disease twenty five years. Chilblains feet and ears, injury, sunburn. Sunlight sensitivity positive. Urinary Porphyrins normal.

F.H. One sister alive and well. P.T. Nil.

X-ray. Chest: There are several healed calcified Tuberculous foci in the upper lobe of the right lung. No evidence of recent activity. Sinuses: Negative.

Mouth and Throat. Throat swab negative.

W.B.C. The second white blood cell count was 9,800 per c.m.m. All other white cell counts and all differential counts were within normal limits.

B.S.R. (1) 16, (2) 6, (3) 4.

M.R. 1/100,000 positive.

O.R. Definite to Tubercle.

T. Calciferol 150,000 I.U. daily.

P. The response to treatment was surprisingly rapid and within six weeks, little of the diseased area remained. A brownish red pigmentation marked its site. Treatment was continued for a further sixweeks and by then, all trace of the lesion had disappeared. There was no exascerbation of the Bazin's disease and the scars on the legs remained sound

Case 28 (Contd.)

Result.
20/11/47. Cured.

S.O. There was no recurrence of the disease after twenty months of observation.

Case 29. H.H. F. 56 years.

P.C. 7/8/47. There was a single area of the disease on the left cheek and another on the vertex of the scalp. Both areas were about one inch in diameter. The borders of the cheek lesion were raised and very erythematous while the centre was irregular and covered with thick yellow scales. The scalp lesion was very erythematous and the centre was covered with telangiectases and showed widely dilated follicles.
Seborrhoeic lesion.
Duration: Six years.

P.H. Childhood ailments. Puerperal Sepsis aged twenty four years. Pneumonia aged twenty years and again aged twenty six years. Chilblains negative, injury, scalp wound, sunlight sensitivity negative.

F.H. Three sons and one daughter alive and well. Husband died with pneumonia aged forty two years.

P.T. Four months irregular treatment Sulphonamides in 1943.

X-ray. Chest: Old healed calcified Tuberculous foci were present in the left apex. No recent activity was detected.
Sinuses: Negative.

Mouth and Throat. Healthy. Throat swab: Negative.

W.B.C. All were within normal limits.

B.S.R. (1) 26, (2) 12, (3) 4.

M.R. 1/100,000 Positive.

O.R. No reaction with any ointment.

T. Calciferol 150,000 I.U. daily. Mapharside 1200mgm.

Case 29 (Contd.)

P. There was no response after a three months course of Calciferol, and so the patient was given injections of Mapharside. A response to treatment was soon apparent. Erythema became much less marked and scaling stopped. By completion of the second course of treatment, the cheek lesion had disappeared completely and the scalp lesion had been replaced by sound, thin and depigmented scar tissue.

Result 13/5/48 Cured.

S.O. There was no recurrence of the disease and no reactivity after twelve months observation.

Case 30. W.McG. M. 45 years.

P.C. 7/8/47. There was a single lesion one inch in diameter on the left cheek. The area was bright red in colour with sharply defined but only slightly infiltrated borders The centre was smooth and glistening and showed widely dilated follicles and a few tiny adherent scales at the periphery.
Erythematous lesion.
Duration: Three years.

P.H. Nil. Chilblains negative, Injury negative, sunlight sensitivity, positive.

F.H. Nil.

P.T. Three months very irregular Sulphonamide treatment in 1946.

X-ray. Chest and Sinuses: Negative.

Mouth and Throat. Gums were pale and spongy, and retracted from teeth. Swab negative. Throat: Healthy. Throat swab: Streptococcus Viridans cultured.

W.B.C. All within normal limits.

B.S.R. (1) 18, (2) 7, (3) 4.

M.R. 1/100,000 negative, 1/10,000 positive.

O.R. Definite to Mixed Streptococcal. B.S.R. = 27m.m.

T. Sulphatriad 1Gq.i.d. for alternate five day periods.

Case 30 (Contd.)

P. There was a rapid response of the lesion to treatment. The intense erythema rapidly subsided and all scaling ceased. By the tenth week, all trace of the lesion had disappeared and only a tiny depigmented plaible scar was present at the site. While taking the tablets, the patient experienced nausea and anorexia during the first forty eight hours of each course. This was very unpleasant but not severe enough to stop treatment. Treatment was stopped however, after ten weeks.

Result.
27/11/47. Cured.

S.O. No reactivity and no recurrence of the lesions was detected after eighteen months observation.

Case 31. M.W. F. 41 years.

P.C. 28/8/47. There were multiple areas of the disease on both cheeks and forehead. All areas varied in size and were bright red in colour with sharply defined but not infiltrated edges. The centres were smooth and shining and covered with widely dilated follicles. There were two areas on the left cheek, one on the right cheek and one on the forehead.
Erythematous lesion.
Duration: Two years.

P.H. Childhood ailments. Pyelitis aged thirty years. Chilblains negative, injury negative, sunlight sentisivity negative.

F.H. Two daughters and one son alive and well.

P.T. Nil.

X-ray Chest and Sinuses negative.

Mouth and Throat Healthy. Throat swab: Streptococcus Viridans on culture.

W.B.C. All counts were within normal limits.

B.S.R. (1) 6, (2) 4, (3) 4.

M.R. 1/100,000 negative 1/10,000 negative, 1/1,000 positive.

Case 31 (Contd.)

O.R. Slight to Mixed Streptococcus and definite reaction to Streptococcus Pyogenes.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Response of the lesions was slow but steady. During the first two courses of tablets, there was a local reaction of the lesions. On completion of four months treatment, all activity had gone from the lesions and only the forehead showed evidence of the disease. Area was pigmented and showed dilated follicles. Treatment was completed as uaual.

Result 19/3/48. Markedly improved.

S.O. After fifteen months observation, there was no trace of the cheek lesions. The forehead lesion had been replaced by a small area of sound scar tissue.

Case 32. S.D. F. 34 years.

P.C. 28/8/47. There was a single lesion of Lupus Erythematosus Discoides half an inch in diameter on the nose. The lesion was bright red in colour with well defined slightly scaly but non-infiltrated borders. The centre was smooth, shining and showed numerous dilated follicles.
Erythematous lesion.
Duration: Five months.

P.H. Childhood ailments only. Chilblains negative, injury negative, sunlight sensitivity negative.

F.H. One daughter alive and well. Two sisters alive and well.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Guinea pig innoculated. There was no evidence of Tuberculosis at the post mortem three months later.

Throat and Mouth. Gums were spongy and bled easily and had receded from

Case 32 (Contd.)

the teeth. Swab: Vincent's Spirillae and fusiform bacilli. Throat was healthy. Swab: Streptococcus Viridans on culture.

W.B.C. All counts were within normal limits.

B.S.R. (1) 5, (3) 4.

M.R. 1/100,000 negative, 1/10,000 positive.

O.R. On application of the Mixed Streptococcal ointment to the lesion, there was an almost immediate improvement and after one week, the erythema was very much paler and the borders less definite. In four weeks, only a faint stain remained on the nose and in another two weeks, all trace of the lesions had vanished except for the soundly healed scar of the biopsy.

Result.
13/11/47. Cured.

S.O. No change was evident in the nose after twenty months of observation.

Case 33. M.R. F 41 years.

P.C.
28/8/47. Multiple lesions of the disease were present on the forehead, both cheeks and chin. All areas were sharply defined, dull red in colour and of varying size. The centres showed almost a complete absence of scaling but the follicles were widely dilated. There were two areas on the forehead, oneon each cheek and one on the chin. This latter area was the largest lesion and was one inch in diameter.
Erythematous lesion.
Duration: Two years.

P.H. Scarlet fever, measles, and diphtheria in childhood. Tuberculosis of the dorsal spine aged seventeen years. Chilblains, both feet, Injury negative, sunlight sensitivity negative.

F.H. One sister and one brother alive and well. One sister

Case 33 (Contd.)

died in childhood. Cause unknown.

P.T. Nil.

X-ray. Chest: Showed numerous healed and calcified Tuberculous foci in the right apex. X-ray spine: No evidence of recent activity of Tuberculosis. Sinuses: There is diminished translucency in the right antrum. The appearances are consistent with a chronic sinusitis.

Mouth and Throat. Healthy. Throat Swab: Negative.

W.B.C. White cell count at the end of the sixth week of Calciferol therapy was only 3,200 per c.m.m. All other white cell and differential counts were within normal limits.

B.S.R. (1) 16, (2) 14, (3) 5.

M.R. 1/100,000 negative, 1/10,000 positive.

O.R. Definite to Tubercle.

T. Calciferol 150,000 I.U. daily, 1200mgm Mapharside.

P. There was no response after three months Calciferol treatment. Mapharside was subsequently given in two courses each of 600mgm. Response to the injections in the first course was slow and the lesions showed only slight fading in the erythema. During the rest period, the lesions changed considerably and during the second course, there was a rapid improvement. On completion, sound scar tissue was present in the chin and forehead, while the cheek lesions were completely gone.

Result 11/6/48 Cured.

S.O. Scar tissue remained sound after twelve months observation

Case 34. J.W. M. 30 years.

P.C. 4/9/47. This patient was previously treated with injections of

Case 34 (Contd.)

Bismuth Metal but with no change in the lesions. For P.C., P.H., F.H., P.T., and X-ray see Case 19 in the Bismuth Metal series.
Erythematous lesion.
Duration: Four and a half years.

P.H. Chilblains, both feet and hands, Injury negative, sunlight sensitivity positive. Urinary porphyrins normal.

Mouth and Throat. Healthy: Throat swab: Streptococcus Viridans on culture.

W.B.C. All counts were within normal limits.

B.S.R. (1) 42, (3) 40.

M.R. 1/100,000 negative, 1/10,000 negative, 1/1,000 negative.

O.R. Definite with Mixed Streptococcus. B.S.R.=45 m.m.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. On administration of the tablets, there was an immediate reaction in the lesions. The centres became very erythematous and one of the cheek lesions became very tender and itchy. This reaction was unaccompanied by any constitutional upset and settled rapidly on withdrawal of the drug. The exascerbation however was so uncomfortable to the patient that he requested stoppage of treatment after the third course of tablets. Although during the intervals the lesions appeared to be slightly improved, treatment with Sulphatriad was suspended as the writer considered there was always the danger of dissemination of the disease in a case such as this.

Result.
13/11/47. Slightly improved.

Case 35. B.McA. F. 25 years.

P.C.
13/9/47. Patient presented a large area of the disease one and a half inches in diameter on the left cheek. The area was generally infiltrated, the edges were badly defined and the surface showed dilated follicles and very

Case 35.(Contd.)

marked telangiectases.
Telangiectatic lesion.
Duration: Six months.

P.H. Childhood ailments only. Erythrocyanosis legs, injury negative, sunlight sensitivity positive.

F.H. Nil

P.T. Nil.

X-ray. Chest and Sinuses; Negative.

Mouth and Throat. Tonsils were large and very red. Gland was palpable on left side. Throat swab: Streptococcus Viridans on culture.

W.B.C. All counts were within normal limits.

B.S.R. (1) 15, (2) 10, (3) 3.

M.R. 1/100,000 negative, 1/10,000 positive.

O.R. No reaction to any ointment.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Response to treatment was very good and after two months therapy all infiltration had gone. The skin was of normal texture and the telangiectasia had diminished. After another two months treatment, all trace of the lesion, including rather surprisingly, the telangiectases had vanished, and the skin appeared to be normal. Treatment was stopped at the patient's request.

Result.
2/1/48. Cured.

S.O. There was no recurrence of the lesion after eighteen months observation.

Case 36. J.B. F. 31 years.

P.C. 13/9/47. The patient had two small areas of Lupus Erythematosus Discoides on the chin. These were about the size of a sixpenny piece. The borders were raised and

Case 36 (Contd.)

infiltrated. The centres were depressed and covered with thick yellow greasy adherent scales. In the centre, of the left patch, there was a small area of scar tissue.
Seborrhoeic lesion.
Duration: Three years.

P.H. Childhood ailments. Patient had Tuberculous glands in the right side of neck while at school. These were incised and drained. Small shotty glands still palpable Pneumonia aged twenty two years. Chilblains both heels, injury negative, Sunlight sensitivity negative.

F.H. One daughter, alive and well.

P.T. Six months regular Sulphonamide therapy 1946.

X-ray. Chest: Negative. Sinuses. Both antra show a slight diminution of translucency. This is consistent with a mild chronic sinusitis.

Throat and Mouth. Healthy. Throat Swab: Streptococcus Viridans on culture.

W.B.C. All counts were within normal limits.

B.S.R. (1) 12, (2) 9, (3) 5.

M.R. 1/100,000 positive.

O.R. Definite to Tubercle ointment.

T. Calciferol 150,000 I.U. daily. Mapharside 900mgms.

P. There was no change in the lesions after three months treatment with Calciferol and so treatment was stopped and Mapharside injections started. By the fifth injection, a definite diminution of the infiltration had started. On completion of the first course, the lesions were flat and scaling had ceased. After 300mgm in the second course, treatment was stopped at the patients request as both were replaced by sound scar tissue.

Result 21/5/48 Cured.

S.O. There was no change in the areas after fourteen months observation.

Case 37. M.F. F. 44 years.

P.C. 13/9/47 The patient had multiple extensive lesions of the disease on the forehead, cheeks, chin, scalp and dorsum of both hands. On the face, and on the scalp there were ten separate lesions varying in size from one inch in diameter to one half inch. All lesions were sharply defined and very erythematous in appearance. The borders were slightly infiltrated. The centres were smooth and showed very widely dilated follicles. On the hands, the lesions were cyanotic, infiltrated and tender.
Erythematous lesion.
Duration: Three years.

P.H. Childhood ailments. Patient has had several attacks of tonsillitis since the age of thirty. Last one was eighteen months ago. Chilblains negative, injury negative, sunlight sensitivity positive. Urinary porphyrins: normal.

F.H. Nil

P.T. Nil.

X-ray Chest and Sinuses: Negative.

Mouth and Throat. There was slight enlargement of both tonsils. Throat swab: Negative.

W.B.C. All were within normal limits.

B.S.R. (1) 50, (3) 48.

M.R. 1/100,000 negative, 1/10,000 positive.

O.R. No reaction with any ointment.

T. Sulphatriad 1G q.i.d. for alternate five day periods. Mapharside 1200mgms.

P. During the fourth course of tablets, the patient developed a maculo-papular generalised sensitisation dermatitis. There was no constitutional upset other than intense itching. On stopping the drug, the rash rapidly faded and had completely disappeared after two weeks. A month later 1200mgms Mapharside was given in two courses each of 600mgm but with only slight improvement in the lesions. The erythema faded slightly

Case 37 (Contd.)

and tenderness had disappeared.

Result.
4/6/48. Slightly improved. (For statistics No Change with Sulphatriad)

Case 38. I.McG. F. 52 years.

P.C. 25/9/47. There was an area of the disease one inch in diameter on each cheek. The lesions were irregular in outline and the borders were sharply defined and slightly infiltrated. The centres were smooth, bright red in colour and covered with dilated follicles. There was very slight adherent scaling on the borders.
Erythematous lesion.
Duration: Eighteen months.

P.H. Nervous depression aged forty years. Very irritable and nervous since then. Quinsy aged thirty two. Chilblains negative, injury, sunburn, sunlight sensitivity positive.

F.H. Nil.

P.T. 10 injections Bismuth Metal in 1946.

X-ray. Chest and Sinuses: Negative.

Mouth and Throat. Left tonsil enlarged. Throat swab: Streptococcus Viridans Gums spongy and receeding. Teeth carious. Swab: negative.

W.B.C. Second white blood count was 3,800 per c.m.m. All other counts were between 5,200 and 6,000 per c.m.m.

B.S.R. (1) 26, (2) 20, (3) 12.

M.R. 1/100,000 negative, 1/10,000 negative, 1/1,000 positive.

O.R. Definite with Mixed Streptococcal. B.S.R.= 30 m.m.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesions responded gradually to treatment. Erythema faded and after four months treatment, the lesion on the left cheek was completely replaced by thin scar tissue. On right cheek, area still showed a few

Case 38 (Contd.)

dilated follicles and slight erythema. On completion of treatment, all erythema had gone but the follicles were still dilated.

Result
16/4/48 Markedly improved.

S.O. All trace of right sided lesion had gone after fifteen months observation.

Case 39. T.McC M. 31 years.

P.C. 25/9/47. This case was previously treated with 1200mgm Mapharside but showed no change after this treatment. The patient was subsequently transferred to this series of cases. For P.C., P.H., F.H., P.T., and X-ray see Case 55 in the Mapharside series.
Seborrhoeic lesion.
Duration: Six and a half years.

P.H. Erythrocyanosis both legs. Injury, carbuncle. Sunlight sensitivity positive.

Guinea pig innoculated: Although the guinea pig died prematurely after twenty one days, there was no evidence of Tuberculosis at the post mortem.

Mouth and Throat. Healthy: Throat swab: Negative.

W.B.C. All counts were within normal limits.

B.S.R. (1) 17, (2) 10, (3) 6.

M.R. 1/10,000 positive.

O.R. Slight to Streptococcus Pyogenes.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

B. Lesions responded rapidly to treatment. This was especially noted on the hands where after two months all trace of the lesions had gone. After four months of treatment, the left side of the nose was completely replaced by thin white scar tissue tissue while on the right side only a faint brownish stain remained. Treatment

Case 39 (Contd.)

was continued to completion.

Result
16/4/48. Cured.

S.O. No evidence of recurrence on reactivity after fifteen months observation.

Case 40. J.G. F. 40 yrs.

P.C. 27/9/47. The patient had single lesion on right cheek. The lesion was one and a half inches in diameter and of a dull red colour. The centre was depressed, irregular and covered with thick adherent scales. At one side, there was a small area of scar tissue.
Seborrhoeic lesion.
Duration: Three years.

P.H. Childhood ailments: Phlebitis of right leg aged thirty two years. Chilblains negative, injury, negative, sunlight sensitivity negative.

F.H. One brother alive and well. One brother and one sister both suffering from Pulmonary Tuberculosis.

P.T. Nil.

X-ray. Chest: Negative. Sinuses: There is diminished translucency in the right antrum. The appearances are consistent with chronic sinusitis.

Mouth and Throat. Gums spongy and bleeding easily. Throat swab: Streptococcus Viridans on culture. Teeth carious. Breath very foul.

W.B.C. All were within normal limits.

B.S.R. (1) 24, (2) 20, (3) 11.

M.R. 1/100,000 positive.

O.R. Slight with Tubercle.

T. Calciferol 150,000 I.U. daily. Mapharside 1200mgm.

Case 40 (Contd.)

P. There was no response to Calciferol therapy and so Mapharside injections were given. On completion of both courses, all infiltration had gone from the borders and scar tissue had extended almost over the whole centre area. All scaling had stopped and erythema had gone.

Result.
9/7/48. Markedly improved,

S.O. After nine months observation, fresh activity of one months duration was noted in the lesion. A further course of twelve injections of Mapharside was started on 7/4/49 but this did not arrest the activity and other methods of treatment were given.

Case 41. H.McC M 42 years.

P.C. 18/10/47 There were numerous small areas of the disease on the left cheek and nose. All were very erythematous, sharply defined and non-infiltrated. Centres showed widely dilated follicles.
Erythematous lesion.
Duration: Three months.

P.H. Malaria aged twenty two while in Egypt. Repeated attacks tonsillitis since age of thirty. Chilblains negative, injury negative, sunlight sensitivity negative

F.H. Sister has Pulmonary Tuberculosis.

P.T. Nil.

X-ray Chest and Sinuses: Negative.

Mouth and Throat. Tonsils enlarged but not inflamed. Throat swab negative. Gums were very spongy, receeding and bled easily. Swab: Vincent's Spirillae.

W.B.C. All were within normal limits.

B.S.R. (1) 17, (2) 12, (3) 3.

M.R. 1/100,000 negative, 1/10,000 positive.

Case 41(Contd.)

W.R. Doubtful. W.T. repeated and Kahn doubtful.

O.R. No reaction with any ointment.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P Response to treatment was steady and after four months all trace of the lesions had vanished except for a small area of depigmented scar tissue on the nose. Treatment was continued as described for another two months.

Result.
7/5/48 Cured.

S.O. No recurrence was observed after twelve months.

Case 42. F.T. M. 38 years.

P.C. 18/10/47 This case which had been treated uncussessfully with 800mgms Mapharside was now transferred to the present series of cases. For P.C., F.H., P.H., P.T. and X-ray see Case 14 in the Mapharside series.
Erythematous lesion.
Duration: Seven years.

P.H. Chilblains negative, injury negative, sunlight sensitivity positive.

Mouth and Throat. Tonsils enlarged. Throat swab: Streptococcus Viridans cultured.

W.B.C. A full investigation of the blood revealed no abnormalities.

B.S.R. (1) 8, (2) 8, (3) 2.

M.R. 1/100,000 negative, 1/1,000 positive. 1/1,000 Horse Serum: Severe reaction.

O.R. Slight to Streptococcus Pyogenes.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesions responded slowly to treatment and after two months there was only a slight fading in the erythema. During the next two months however, all lesions rapidly changed and were replaced by sound depigmented smooth scar tissue. Treatment was continued to completion. Repeated blood

Case 42 (Contd.)

examinations revealed no changes and Neohepatex was not increased.

Result
7/5/48. Cured.

S.O. No reactivity after fourteen months of observation.

Case 43 I.M. F. 32 years.

P.C. 18/10/47 Patient had a large area of the disease on the frontal region of the scalp and another large area above the left ear. Both regions were roughly rectangular in shape and measured one inch by three quarters of an inch. The borders were raised, bright red and infiltrated. The centres were covered with telangiectases and in certain parts showed thick adherent scaling and in others, small areas of scar tissue.
Seborrhoeic lesion.
Duration: Twelve years.

P.H. Tuberculous glands in right side of neck when at school. These required incision and drainage. Patient had chilblains - toes. Injury negative, sunlight sensitivity positive.

F.H. Nil.

P.T. Four months regular Sulphonamide treatment in 1943.

X-ray. Chest: There was a calcified Tuberculous focus in lower lobe of the right lung, with calcified glands in the right hilum.
Sinuses: Clear.

Mouth and Throat: Healthy. Throat swab: Streptococcus Viridans on culture.

B.S.R. (1) 20, (2) 12, (3) 8.

M.R. 1/100,000 positive.

O.R. Definite to Tubercle. B.S.R. 25 m.m.

T. Calciferol 150,000 I.U. daily. Mapharside 1200mgms.

Case 43 (Contd.)

P. There was no response in the lesions after three months with Calciferol and so Mapharside injections were started. There was a steady and continued improvement in both lesions. All infiltration of the edges had gone and scaling had stopped. Scar tissue was extending on completion of first course. At the end of the second course of treatment, all activity had ceased. The frontal region was completely scarred but in the temporal lesion there was a small area of erythema not yet scarred over.

Result.
23/7/48 . Markedly improved.

S.O. There was no reactivity and scar tissue was sound after twelve months of observation.

Case 44. A.C. F. 46 years.

P.C. 30/10/47. Patient had typical "batswing" lesion of Lupus Erythematosus Discoides. The lesion extended slightly on to both cheeks. The borders were clearly defined but only slightly infiltrated and the centre was bright red, smooth and covered with widely dilated follicles.
Erythematous lesion.
Duration: One year.

P.H. Childhood ailments. Chronic Otitis Media for eight years. Chilblains both feet and hands. Injury sunburn, sunlight sensitivity positive.

F.H. Two sons alive and well.

P.T. Nil.

X-ray Chest and Sinuses Negative.

Throat and Mouth. Throat swab: Streptococcus Viridans on culture. Mouth healthy.

B.S.R. (1) 17, (2) 14, (3) 8.

M.R. 1/100,000 negative, 1/10,000 negative, 1/1,000 negative.

O.R. Slight with Streptococcus Pyogenes.

T. Sulphatriad 1G q.i.d. for alternate five day periods

Case 44 (Contd.)

P. Lesions responded rapidly to treatment. During the first three courses of tablets, there was a slight exascerbation of the lesion. This reaction lessened with each course and during the rest intervals, it rapidly disappeared. After four months treatment, only a few dilated follicles on the bridge of the nose remained. There was slight scarring on the left cheek. Treatment was continued at the reduced dosage for another two months but follicles still remained dilated

Result.
21/5/48. Markedly improved.

S.O. There was no change in the lesion and no further scar formation after twelve months observation.

Case 45. A.R. F. 32 years.

P.C.
13/11/47. Patient had two small areas of the disease on the left cheek. These were about the size of a sixpenny piece and were bright red in colour with sharply defined non-raised edges and smooth glistening centres which showed widely dilated follicles. There was slight scaling at the edges. Similar erythematous but more infiltrated lesions were present on the dorsum of the left third and middle fingers.
Erythematous lesion.
Duration: Four years.

P.H. Childhood ailments. Quinsy aged twenty three years. Tonsillectomy aged twenty five years. Chilblains negative, injury negative, sunlight sensitivity positive. Ultra violet light for Acne Vulgaris of chest had to be stopped due to exascerbation of the lesions.

F.H. One sister alive and well.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Mouth and Throat. Tonsillar gland palpable. Throat swab: Positive for Haemolytic Streptococci.

B.S.R. (1) 20, (2) 18, (3) 11.

M.R. 1/100,000 Negative, 1/10,000 Positive.

Case 45 (Contd.)

O.R. Definite to Streptococcus Pyogenes. B.S.R. = 26 m.m.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Response of the lesions was at first slow and very little effect was noted during the first two months. After that, the response was much more rapid and in the next two months most of the activity had disappeared. On completion of treatment, there was still dilated follicles and erythema on the index finger. All other lesions had disappeared except for a tiny area of scar tissue on the cheek.

Result. 4/6/48 Markedly improved.

S.O. After six months observation, there was a small fresh lesion of one months duration on the left cheek. Further Sulphonamide therapy started on 9/12/48 caused this to disappear once again.

Case 46. J.C. F. 34 years.

P.C. 13/11/47 This patient had previously received 1200mgm Mapharside with no improvement. For P.C., P.H., F.H., P.T., and X-ray, see Case 33 in Mapharside series.
Seborrhoeic lesion.
Duration: Seven and a half years.

P.H. Chilblains both heels, injury negative, sunlight sensitivity positive.

Mouth and Throat. Healthy. Throat swab: Streptococcus Viridans on culture.

W.B.C. Nil.

B.S.R. (1) 6, (3) 5.

M.R. 1/10,000 positive.

O.R. No reaction with any ointment.

T. Calciferol 150,000 I.U. daily. Mapharside 1200mgm.

P. After three weeks treatment with Calciferol, the patient

Case 46 (Contd.)

developed headaches, nausea and anorexia. The dosage was reduced but even with 50,000 I.U. daily the symptoms still persisted and so treatment was stopped. There was no upset in the Blood Urea or Serum Calcium. It was decided to try further Mapharside therapy but another 1200mgm produced no change in the lesions and the patient was then transferred for other methods of therapy.

Result.
2/7/48 No change.

Case 47 M.D. F. 42 years.

P.C. 13/11/47 There was a large lesion of the disease on the left cheek. This was about two inches in diameter. It was associated with another lesion of the same size on the vertex of the scalp and extensive involvement of the lower lip. The cheek and scalp lesions had infiltrated, dull red borders and centres showed areas of scarring, dilated follicles and thick adherent scaling. The lip was heavily crusted and very tender.
Seborrhoeic lesion.
Duration: Twenty four years.

P.H. Childhood ailments only. Chilblains negative, injury negative, sunlight sensitivity negative.

F.H. Two sons and one daughter alive and well. Two daughters suffering from Pulmonary Tuberculosis.

P.T. Twenty injections Bismuth Metal 1938 - 39.

X-ray. Chest: Negative. Sinuses: There is diminished translucency in the left antrum. The X-ray appearance is consistent with chronic sinusitis.

Mouth and Throat. Healthy. Throat swab: Negative.

B.S.R. (1) 7, (2) 8.

M.R. 1/100,000 positive.

O.R. Definite to Tubercle ointment.

T. Calficerol 150,000 I.U. daily, 1200mgm Mapharside.

Case 47 (Contd.)

P. There was no response in the lesions after a three months course of Calciferol. Mapharside was then instituted and two courses each of 600mgm was given. The temderness and crusting disappeared from the lip but there was no other change.

Result.
27/8/48. Slightly improved.

Case 48. B.B. F. 28 years.

P.C. 20/11/47 There was a single large lesion of the disease just below the right eye. This area was about the size of of a shilling and had well defined non-infiltrated borders. It was dull red in colour and the centre was smooth and covered with dilated follicles which showed slight plugging.
Erythematous lesion.
Duration: Three months.

P.H. Measles and scarlet fever in childhood. Rheumatic fever aged sixteen years. Chilblains negative, injury negative, sunlight sensitivity positive.

F.H. Two brothers alive and well.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Mouth and Throat. Healthy. Throat swab: Streptococcus Viridans on culture.

B.S.R. (1) 23, (2) 20, (3) 5.

M.R. 1/100,000 negative, 1/1,000 positive.

O.R. Definite to Mixed Streptococcal. B.S.R. = 26m.m.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Response was slow at first but after two months, the lesion rapidly settled and had entirely disappeared after four months treatment. Treatment was then atopped at the patient's request.

Result.
16/4/48 Cured.

S.O. No change in the lesion after fifteen months observation.

Case 49. A.G. F. 38 years.

P.C. 20/11/47. There was a widespread "batswing" lesion involving the nose and both cheeks. The borders were sharp, slightly infiltrated and slightly scaly. The centre was depressed, bright red in colour and showed definite scarring in certain areas. In other areas, widely dilated follicles were present.
Erythematous lesion.
Duration: Six years.

P.H. Nil. Chilblains negative, injury negative, sunlight sensitivity positive.

F.H. Two brothers died of Pulmonary Tuberculosis. One brother alive and well.

P.T. Nil.

X-ray. Chest: Negative. Sinuses: There was diminished translucency in both antra. Appearances are in keeping with a pansinusitis.

Mouth and Throat. Healthy: Swab of throat: Streptococcus Viridans on culture.

B.S.R. (1) 10, (2) 8, (3) 8.

M.R. 1/100,000 negative, 1/10,000 positive.

O.R. Definite to Streptococcus Pyogenes.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesions responded gradually to treatment. During first three courses of tablets, there was a local reaction in the lesion, but this rapidly settled during the intervals. At the end of four months treatment, only a small area on the left cheek remained active. On completion of treatment, this had gone, although a few dilated follicles and brown pigmentation remained.

Result 11/6/48. Markedly improved.

S.O. After twelve months observation, the follicles still remained dilated, although pigmentation had vanished. There was no evidence of reactivity.

Case 50. T.McS. F. 50 years.

P.C. 6/12/47 — Patient had an area of the disease on each cheek. These were about the size of a sixpenny piece and had well defined slightly infiltrated borders. The centres were slightly depressed, smooth and showed numerous dilated follicles a few of which had horny plugs. Erythematous lesion. Duration: One year.

P.H. — Diphtheria in childhood. Recurrent frontal headaches for many years. Chilblains both feet, injury negative, sunlight sensitivity positive. Urinary porphyrins: normal.

F.H. — Nil.

P.T. — Nil.

X-ray — Chest: Negative. Sinuses: There is diminished translucency of the right antrum. This is consistent with a chronic sinusitis.

Mouth and Throat. — Healthy. Throat swab: Negative.

B.S.R. — (1) 15, (3) 4.

M.R. — 1/100,000 positive.

O.R. — During the application of the first three ointments, there was no change in the lesion. On the application of the Tubercle ointment however, there was an immediate improvement in the lesion to which it was applied. On applying it to the second lesion, a response was again noted. Within four weeks of application, the lesion on the left cheek had completely disappeared. A further two weeks was necessary to clear the lesion on the right side. Only a faint pigmentation remained.

Result 28/2/48 — Cured.

S.O. — After sixteen months observation, all pigmentation had disappeared and there was no evidence of reactivity.

Case 51. K.O. F. 34 years.

P.C. 6/12/47. There was a typical "batswing" lesion involving both sides of the nose. The borders of the area were heavily infiltrated, raised and of a dull red colour. The centre showed a slight area of scarring on the bridge of the nose and thick adherent scales on the sides.
Seborrhoeic lesion.
Duration: Five years.

P.H. Childhood ailments. Pneumonia aged twenty two years. Chilblains negative, injury negative, suhlight sensitivity negative.

F.H. Nil.

P.T. Nil.

X-ray. Chest : There were multiple healed calcified Tuberculous foci in the left apex. No evidence of recent activity was seen. Sinuses: Negative.

Mouth and Throat. Healthy. Throat swab: Positive for Haemolytic Streptococci and Streptococcus Viridans.

B.S.R. (1) 12, (2) 10, (3) 4.

M.R. 1/10,000 positive.

O.R. Slight to Mixed Streptococcus and slight to Tubercle. B.S.R. = 15 m.m.

T. Calciferol 150,000 I.U. daily. Sulphatriad 1G q.i.d. for alternate five day periods.

P. There was no response in the lesion after three months treatment with Calciferol. Sulphatriad was then started and a response was soon noted. Within one month, the borders had lost all infiltration and were much paler. After four months, the scar tissue on the bridge of the nose had extended and covered the entire right side. On completion of treatment, a few dilated follicles remained on the left side of the nose.

Result 3/9/48 Markedly improved.

S.O. There was no reactivity and scar tissue remained sound after ten months observation.

Case 52. A.McB M. 41 years.

P.C. 6/12/47. There was a single large area of the disease about one and three quarter inches in diameter involving the lower part of the right cheek. It extended over the mandible onto the neck. The borders were raised and hard and the centre covered with dilated follicles and thick yellowish grey adherent scales.
Seborrhoeic lesion.
Duration: Eighteen months.

P.H. Childhood ailments. Tuberculous glands right side of neck aged twelve years. Chilblains negative, injury, frost-bite right side of cheeks, sunlight sensitivity positive.

F.H. Only sister Pulmonary Tuberculosis.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Guinea pig innoculated. No evidence of Tuberculosis was found at post mortem three months later.

Mouth and Throat. Healthy, Throat swab: Negative.

B.S.R. (1) 15, (2) 9, (3) 2.

M.R. 1/10,000 positive.

O.R. Definite with Tubercle.

T. Calciferol 150,000 I.U. daily. Mapharside 1200mgm.

P. After three weeks treatment with Calciferol, the patient experienced severe headaches, nausea and anorexia. The dosage was lowered to 100,000 I.U. daily and symptoms disappeared. There was no upset in the Serum Calcium or Blood Urea. No response was obtained after three months treatment. Mapharside injections were then given and after 300mgm of the second course, all trace of the lesion had gone except for an area of thin scar tissue one centimetre in diameter at the centre of the lesion. Treatment was continued until completion.

Result 10/9/48 Cured.

S.O. No reactivity after ten months observation.

Case 53 A.S. F 46 years.

P.C. 13/12/47 There was a small bright red lesion of the disease on the tip of the nose. This was about a quarter of an inch in diameter. There was no infiltration and no scaling but dilated follicles were evident. A typical lesion also affected the upper lip. There was slightly more infiltration present than on the nose lesion although it was the same size.
Erythematous lesion.
Duration: One year.

P.H. Nil. Chilblains both heels. Injury cigarette irritation, sunlight sensitivity negative.

F.H. Nil.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Mouth and Throat. Teeth carious. Caries at the neck of first lower canine. Gums healthy. Throat swab: Streptococcus Viridans cultured. Carious tooth not extracted.

B.S.R. (1) 6, (2) 4, (3) 4.

M.R. 1/10,000 negative. 1/1,000 negative.

O.R. Definite to Mixed Streptococcus.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesion responded rapidly to treatment and after two months treatment all trace of the lesions had disappeared. Treatment was continued for another six weeks, and then stopped at the patient's request.

Result. 24/4/48. Cured.

S.O. After twelve months observation there was no evidence of recurrence of the disease. The patient has not reported for further observation after that survey.

Case 54. S.M. F. 49 years.

P.C. 18/12/47. Patient was treated in the Mapharside series of cases. She received 1200mgm Mapharside with only slight

Case 54 (Contd.)

improvement. For P.C., P.H., F.H., P.T. and X-ray see Case 49 in that series.
Erythematous lesion.
Duration: Five years.

P.H. Chilblains hands and feet, injury, stye, sunlight sensitivity negative.

Mouth and Throat. Throat swab: Streptococcus Viridans cultured.

B.S.R. (1) 18, (2) 14, (3) 8.

M.R. 1/10000 positive.

O.R. Definite to Streptococcus pyogenes.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. After four months treatment, there was a very definite improvement in the lesions. This had been slow during the first few weeks but then became more rapid. All trace of the lesions on the cheek had gone and the scalp lesion was showing considerable scar tissue. There was no infiltration of the edges. Telangiectases was still present.

Result 3/7/48 Markedly improved.

S.O. There was no evidence of reactivity in any of the lesions and the scar tissue on the scalp had extended slightly after twelve months observation.

Case 55. C.T. F. 49 years.

P.C. 18/12/47. There was a large lesion of Lupus Erythematosus Discoides on the forehead and another small lesion on the left side of the nose. The forehead lesion measured two inches by one inch. The borders were sharply defined but only slightly infiltrated. The centre was bright red in colour and showed widely dilated follicles a few of which had epithelial plugs. The small lesion on the nose had a similar appearance.
Erythematous lesion.
Duration: Six months.

Case 55 (Contd.)

P.H. Anaemia aged forty five. Treated with iron. Blood picture now normal. Chilblains negative, injury negative, sunlight sensitivity negative.

F.H. Three daughters alive and well.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Mouth and Throat: Teeth carious. X-ray showed large area of translucency surrounding lower fourth left root. Patient refused extraction. Throat swab: Positive for Haemolytic Streptococci and Streptococcus Viridans.

B.S.R. (1) 12, (3) 4.

M.R. 1/10,000 negative, 1/1,000 positive.

O.R. On application of Mixed Streptococcus ointment to the nasal region, an immediate improvement was noticed. A similar beneficial effect was observed on the forehead lesion. After four weeks, evidence of scar tissue formation was present in both areas. By the eighth week of application, both areas were completely healed, and all that remained was sound pliable but depigmented scar tissue. The healing power was limited solely to the Mixed Streptococcal ointment.

Result 27/3/48. Cured.

S.O. No reactivity was present and scar tissue was sound after fifteen months observation.

Case 56. C.R. F. 39 years.

P.C. 20/12/47 This patient had developed an arsenical dermititis after 480mgm Mapharside. This cleared up fairly rapidly with appropriate treatment but a patch test performed on 12/9/47 showed the patient to be sensitive to Mapharside. The lesions of Lupus Erythematosus Discoides.had remained unchanged. For P.H., F.H., P.T., and X-ray see Case 53 in the Mapharside series.

Seborrhoeic lesion.

Duration: Four years.

Case 56 (Contd.)

P.H. Chilblains, negative. Injury, septic scratch, sunlight sensitivity negative.

Mouth and Throat: Tonsils were enlarged but there was no evidence of visible sepsis. Throat swab. Positive for Haemolytic Streptococci.

B.S.R. (1) 32, (2) 18, (3) 12.

M.R. 1/10,000 negative, 1/1000 positive.

O.R. Slight to Streptococcus Pyogenes.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesions responded steadily to treatment and within two months of treatment all scaling and infiltration had ceased. The changes were slower in the left ear. After four months treatment, the chin lesions had almost completely disappeared and dosage was reduced by half. On completion of treatment, eight weeks later all trace of the chin lesions had gone except for a thin scar at the left side. Telangiectases were still present on the lobe of the ear and a few dilated follicles were evident on the rim. All activity however had ceased.

Result
10/7/48. Markedly improved.

S.O. There was no evidence of reactivity twelve months later.

Case 57. J.W. M. 23 years.

P.C.
20/12/47. There was a typical area of Lupus Erythematosus Discoides involving right side of nose and cheek. The borders were indurated and raised and of a dull red almost cyanotic hue. Centre was depressed and showed dilated plugged follicles and thick greyish white scales.
Seborrhoeic lesion.
Duration: Eighteen months.

P.H. Repeated attacks of tonsillitis. Last one nine months

Case 57 (Contd.)

ago. There was a history of Tuberculous adenitis in right side of neck while at school. Palpable glands still present. There was no history of chilblains. Injury sunburn. Sunlight sensitivity positive.

F.H. One brother alive and well.

P.T. Nil.

X-ray. Chest and Sinuses Negative.

Guinea-pig innoculated. No evidence of Tuberculosis found at post mortem examination three months later.

Mouth and Throat. Healthy: Throat swab: Streptococcus Viridans cultured.

B.S.R. (1) 26, (2) 27.

M.R. 1/10,000 positive.

O.R. Definite to Streptococcus Pyogenes ointment B.S.R. =31mm.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. After four months treatment with Sulphatriad, there was a definite lessening of scaling but this was the only apparent change in the lesion and so treatment was suspended and another experimental method of therapy irrelevant to this Thesis substituted.

Result.
15/5/48 . Slightly improved.

Case 58. I.R. F. 33 years.

P.C. 3/1/48. This case had previously been treated with injections of Bismuth Metal but with only a slight response to treatment. For P.C., P.H., F.H., P.T. and X-ray see Case 12 in the bismuth series.
Erythematous lesion.
Duration: Five years.

P.H. Chilblains negative, injury negative, sunlight sensitivity negative.

Case 58 (Contd.)

Mouth and Throat: Both tonsils were enlarged but there was no obvious sepsis present. Throat swab: Streptococcus Viridans.

B.S.R. (1) 7, (2) 4, (3) 6.

M.R. 1/10,000 negative, 1/1,000 positive.

O.R. No reaction to any ointment.

T. Sulphatriad 1G q.i.d. for alternate five day periods. Mapharside 900mgms.

P. On taking the Sulphonamide tablets, the patient experienced very severe nausea and vomiting. This occurred on the second day of the course and continued for the rest of the course. This was so severe and upsetting for the patient that treatment was stopped after the start of the fourth course of tablets. Mapharside was then given in the usual dosage and there was an immediate response in the lesions. By the end of the first course of treatment, almost all trace of the forehead lesion had gone and there was definite scar formation in its centre. After 300mgm of the second course, treatment was stopped at the patient's request. Only a faint red scar remained on the forehead while the ear still showed a few telangiectases.

Result 10/7/48. Markedly improved.(For statistics Slightly improved with Sulphatriad)

S.O. There was no reactivity and erythema on the forehead had faded after twelve months observation.

Case 59 A.G. F. 22 years.

P.C. 3/1/48 Patient had several lesions of the disease on both cheeks, nose and inner canthus of the left eye. All areas were very erythematous, non-infiltrated and showed smooth, glistening centres with widely dilated follicles. The lesion of the eye showed slight scaling at its periphery. The lesions varied in size from one eighth of an inch at the eye to three quarters of an inch on the cheeks.
Erythematous lesion.
Duration: Six months.

Case 59 (Contd.)

P.H. Childhood ailments. Chilblains both feet, Injury negative, sunlight sensitivity positive. Urinary porphyrins: Normal.

F.H. Father died of Pulmonary Tuberculosis when patient was sixteen years.

P.T. Nil.

X-ray. Chest: There is an old healed and fibrotic Tuberculous lesion present in the upper left zone. There is no evidence of any recent activity. Bilateral cervical ribs are noted.
Sinuses: There is diminished translucency of the frontal sinuses consistent with sinusitis.

Mouth and Throat. Healthy. Throat swab: Negative.

B.S.R. (1) 28, (3) 6.

M.R. 1/10,000 positive.

O.R. On application of the Tubercle ointment, a definite improvement was soon noticed in the lesions. This was repeated in the other lesions on application of the ointment. After seven weeks application of this ointment all trace of the lesions had gone except for a faint brownish-red pigmentation on the cheeks.

Result 3/4/48. Cured.

S.O. After fifteen months observation, all trace of pigmentation had gone and skin appeared to be normal and sound.

Case 60. C.I. F. 27 years.

P.C. 3/1/48. There was a triangular shaped patch of Lupus Erythematosus Discoides involving left side of the nose. Lesion was bright red and only slightly infiltrated. There was a glazed smooth surface with widely dilated follicles. In a few instances, at the edge of the lesion, these showed horny plugging.
Erythematous lesion.
Duration: Four months.

Case 60 (Contd.)-

P.H. Childhood ailments. Tuberculous glands in right side of neck at eleven years. Still palpable. Quinsy at age of twenty four and again a year later. Chilblains - both great toes. Injury negative, sunlight sensitivity negative.

F.H. Mother died of Pulmonary Tuberculosis when patient was aged eighteen. One sister alive and well.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Mouth and Throat. Tonsils enlarged and inflamed, but no gross sepsis evident. Throat swab: Streptococcus Viridans cultured.

B.S.R. (1) 16, (2) 5.

M.R. 1/10,000 positive.

O.R. On application of the Streptococcus Pyogenes ointment to the lesion, there was a rapid improvement. The erythema started to fade and infiltration to disappear. This healing effect was proved to be limited to the one ointment only. After four weeks of application all trace of the lesion had gone except for a slight brownish pigmentation over lower part of the lesion.

Result 13/3/48. Cured.

S.O. All trace of pigmentation had vanished and skin appeared to be completely normal after fifteen months observation.

Case 61. C.H. F. 54 years.

P.C. 13/1/48 There were multiple small lesions of the disease on the right cheek and temporal regions. Lesions were about the size of a sixpence and were very erythematous. The borders were well defined and the centre showed dilated follicles and an occasional small silvery adherent scales. In all, six lesions were present.
Erythematous lesion.
Duration: Five months

Case 61 (Contd.)

P.H. Childhood ailments. Recurrent attacks of tonsillitis for many years. Appendicectomy aged thirty years. Hair-dye dermatitis age fifty. Chilblains, negative, injury sunburn, sunlight sensitivity negative.

F.H. Four children alive and well.

P.T. Nil.

X-ray. Chest: Negative. Sinuses: There is diminished translucency in both antra consistent with a chronic sinusitis.

Mouth and Throat. Healthy. Throat swab: Posi tive for Haemolytic Streptococci.

B.S.R. (1) 17, (2) 9, (3) 2.

M.R. 1/10,000 negative, 1/1000 positive.

O.R. Definite to Streptococcus Pyogenes. B.S.R. = 22m.m.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesions responded well to treatment although during the first few courses there was a local exascerbation of the lesions. These became itchy, hot and very bright red. This reaction rapidly settled during the interval and gradually lessened with each course. After two months treatment, all activity had gone from the lesions and two of the smaller ones on the forehead had disappeared. At the end of four months, all trace of the lesions had gone except for faint brownish pigmentation. Treatment was continued until completion.

Result 31/7/48 Cured.

S.O. Pigmentation had faded and there was no evidence of reactivity after eleven months observation.

Case 62. S.M. M. 52 years.

P.C. 16/1/48 There was a patch of the disease about one inch in diameter on each temporal region. The edges were raised

Case 62 (Contd.)

and very indurated and of a dull red colour. The centres were depressed, covered with adherent yellowish scales and dilated follicles.
Seborrhoeic type lesion.
Duration: One and a half years.

P.H. Pneumonia aged forty years. Quinsy aged twenty eight and again aged thirty six. Chilblains both feet, injury sunburn, sunlight sensitivity negative.

F.H. Nil.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Guinea pig innoculated: No evidence of Tuberculosis was found at post mortem examination three months later,

Mouth and Throat. Healthy. Tonsillar glands palpable. Throat swab: Positive for Haemolytic Streptococci and Streptococcus Viridans.

B.S.R. (1) 6, (3) 6.

M.R. 1/10,000 negative, 1/1,000 positive.

O.R. No reaction with any ointment.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. After four months treatment, there was a slight diminution in scaling and the borders were less elevated but these were the only changes observed and so treatment was stopped and another method started.

Result 21/5/48. Slightly improved.

Case 63. B.F. F. 43 years.

P.C. 17/1/48 There was a typical "batswing" lesion of the disease involving the nose and spreading on to both cheeks. The lesion was very erythematous and the centre was shining and showed widely dilated follicles. There was slight follicular plugging on the left cheek but no definite scaling. The borders were well demarcated and definitely

Case 63 (Contd.)

infiltrated but not raised.
Erythematous lesion.
Duration: Two years.

P.H. Nil. Chilblains negative, injury negative, sunlight sensitivity negative.

F.H. Two daughters alive and well.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Guinea pig innoculated: No evidence of Tuberculosis found at post mortem examination three months later.

Mouth and Throat: Healthy. Throat swab: Streptococcus Viridans on culture.

B.S.R. (1) 32, (2) 24, (3) 10.

M.R. 1/10,000 positive.

O.R. Definite to Streptococcus Pyogenes.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesions responded gradually to Sulphatriad and after two months, treatment produced a gradual fading of the erythema and there was a slight scar formation over the bridge of the nose. After four months treatment, all activity had ceased and the scar tissue had spread onto the left cheek. Right side showed a few dilated follicles and some pigmentation. Treatment was completed.

Result
31/7/48 Markedly improved.

S.O. All trace of pigmentation had vanished and scar tissue remained pliable and sound after eleven months observation.

Case 64. E.K. F. 26 years.

P.C.
20/1/48 There were two small lesions of the disease on the right side of the forehead. These were about half an inch in

(Case 64 (Contd.)

diameter. The edges were raised and infiltrated and the centre depressed and irregularly scaly. On the vertex of the scalp, there was another small lesion half an inch in diameter. This showed thin adherent scaling and on removal of this, there was marked telangiectases. Hair loss was evident over the patch.
Seborrhoeic lesion.
Duration: Seven years.

P.H. Childhood ailments only. Patient had a very definite Raynaud's disease affecting the fingers of both hands. This had been present for ten years and was gradually becoming more severe. Injury negative, sunlight sensitivity negative.

F.H. Nil.

P.T. 15 injections Bismuth Metal in 1943.

X-ray. Chest: An old healed and calcified Tuberculous focus is present at the right base. No evidence of any recent activity was seen. Sinuses: Negative.

Mouth and Throat. Healthy. Throat swab: Positive for Haemolytic Streptococci and Streptococcus Viridans.

B.S.R. (1) 28, (2) 13 (3) 3.

M.R. 1/10,000 positive.

O.R. Slight to Mixed Streptococcal.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Response of lesions to treatment was steady and progressive and after two months treatment, only faint staining and a few dilated follicles remained on the forehead and all scaling had ceased on the scalp. On completion of treatment, all trace of the forehead lesions had gone and the vertex lesion was completely replaced by sound scar tissue, showing telangiectasia.

Result 14/8/48. Cured.

S.O. There was no evidence of reactivity after eleven months observation.

Case 65. B.N. F. 40 years.

P:C. 2/2/48 There was a lesion of Lupus Erythematosus Discoides on the left cheek and another on the left side of the nose. Both lesions had hard raised borders and the centres were covered with adherent greasy yellow scales and showed widely dilated follicles.
Seborrhoeic lesion.
Duration: Six years.

P.H. Tuberculous glands right side of neck aged ten years. Required incision and drainage. Chilblains negative, injury negative, sunlight sensitivity positive.

F.H. Sister died of Pulmonary Tuberculosis when patient was twenty five.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Mouth and Throat. Lower teeth carious. Apical abscess seen at left lower lateral incisor. Extraction completed. Throat swab: Streptococcus Viridans cultured.

B.S.R. (1) 25, (2) 20, (3) 12.

M.R. 1/10,000 positive.

O.R. Slight to Streptococcus Pyogenes.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. The lesions responded well to treatment and after two months therapy, much of the scaling had ceased and the borders were flatter and less infiltrated. On completion of treatment, the lesion on the nose was replaced by thin depigmented and peculiarly puckered scar tissue.. The lesion on the cheek still showed a few dilated follicles and a reddish brown pigmentation.

Result 4/10/48. Markedly improved.

S.O. A few dilated follicles still remained on the cheek but staining had disappeared. Nose remained healed after ten months observation.

Case 66. E.McC. F. 44 years.

P.C. 2/2/48. Patient had a kidney shaped lesion of Lupus Erythematosus Discoides under the left eye and involving the left eyelid. Lesion was sharply defined, bright red in colour and had a few silvery scales along its lower border. Centre showed widely dilated follicles. Conjunctiva appeared to be clear.
Erythematous lesion.
Duration: Six years.

P.H. Repeated attacks of Tonsillitis. Last attack eighteen months ago. Puerperal Sepsis aged twenty two. Chilblains both feet, injury negative, sunlight sensitivity negative.

F.H. Two children alive and well.

P.T. Nil.

X-ray Chest and Sinuses: Negative.

Mouth and Throat. Tonsils large but no visible signs of sepsis. Throat swab: positive for Streptococcus Viridans.

B.S.R. (1) 20, (2) 16.

M.R. 1/1,000 negative.

O.R. No reaction to any ointment.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesions were responding slightly to treatment. The erythema had faded and scaling had ceased when patient defaulted after four months of treatment.

Result 18/6/48. Slightly improved.

Case 67. A.S. F. 32 years.

P.C. 7/2/48 There was an area of the disease on the right cheek. This was of the rarer telangiectatic variety and was one inch in diameter. The border was indefinite and the whole area appeared to be infiltrated. The surface was covered with telangiectases and dilated follicles.
Telangiectatic lesion.
Duration: Two weeks.

Case 67 (Contd.)

P.H. Patient had Tuberculous glands in the right side of the neck aged twelve years. She has had a typical but not widespread Alopecia Areata for nine months. Chilblains, both heels, injury negative, sunlight sensitivity negative.

F.H. Nil.

P.T. Nil.

X-ray. Chest: Negative. Sinuses: There was diminished translucency in both frontal sinuses. This is consistent with a chronic sinusitis.

Mouth and Throat. Healthy. Throat swab: Positive for Haemolytic Streptococci.

B.S.R. (1) 21, (2) 12, (3) 5.

M.R. 1/10,000 positive.

O.R. Definite to Streptococcus Pyogenes. B.S.R. = 25 m.m.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesion responded quickly to treatment and after two months treatment, all infiltration had gone. After four months only a few telangiectatic vessels remained to mark the site of the lesion. Skin was soft and pliable . Treatment was stopped at the patient's request.

Result 3/7/48 . Cured.

S.O. Still slight telangiectasia over the site of the lesion but no evidence of reactivity after twelve months observation.

Case 68. G.P. F. 30 years.

P.C. 21/2/48 There were four small areas of the disease on the left cheek and another lesion on the nose. The lesions varied in size and were roughly circular in shape. The edges were sharply defined and slightly infiltrated. The centres were smooth, shining and covered with dilated follicles a few of which, on the nasal lesion, had keratotic plugs.
Erythematous lesion.

Case 68 (Contd.)

Duration: Six years.

P.H. Pneumonia aged twenty six years. Chilblains, toes of both feet. Injury negative, sunlight sensitivity negative.

F.H. Nil.

P.T. Four months irregular Sulphonamide therapy in 1946.

X-ray. Chest and Sinuses negative.

Mouth and Throat. Healthy. Throat swab: Streptococcus Viridans on culture.

B.S.R. (1) 28, (2) 16, (3) 10.

M.R. 1/10,000 Negative, 1/1,000 positive.

O.R. Definite to Mixed Streptococcal.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Lesions responded gradually to treatment. After four months therapy, all trace of the cheek lesions had gone and most of the nasal lesions had been replaced by thin smooth, slightly depressed scar tissue. At the end of treatment, scarring was complete.

Result 11/9/48. Cured.

S.O. At the sixth month of observation, there was a small fresh lesion on the cheek. This had been present for four weeks. Sulphonamide therapy was restarted on 26/2/49 and the lesion disappeared once again after two months treatment.

Case 69. A.C. F. 34 years.

P.C. There was a single small lesion of Lupus Erythematosus Discoides on the left cheek. This measured one inch in diameter and was bright red with well defined non-infiltrated edges. The centre showed dilated follicles and slight silvery scaling at its outer rim.
Erythematous lesion.
Duration: Two months.

Case 69 (Contd.)

P.H. Childhood ailments only. Erythrocyanosis of both legs. with a typical chilblain circulation. Injury, negative sunlight sensitivity negative.

F.H. One daughter alive and well.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Mouth and Throat. Healthy. Throat swab: Streptococcus Viridans cultured.

B.S.R. (1) 6, (2) 6, (3) 4.

M.R. 1/10,000 positive.

O.R. Slight to Tubercle.

T. Calciferol 150,000 I.U. daily. Mapharside 1200mgm.

P. There was no responde to treatment in the lesion after three months treatment with Calciferol, and so Mapharside was given. By the end of the first course of treatment, only a faint reddish brown stain indicated the site of the lesion. On completion of treatment, all trace of the lesion had vanished.

Result 23/11/48. Cured.

S.O. No recurrence of the disease after nine months observation.

Case 70. E.S. M. 12 years.

P.C. 2/3/48. There was a large lesion of the disease affecting the left side of nose just superior to the nostril and left cheek. The lesion was kidney-shaped with the convex border uppermost. The borders were erythematous and sharply defined. The centre was slightly depressed, much paler, smooth and covered with extremely dilated follicles.
Erythematous lesion.
Duration: Three months.

P.H. Measles and mumps in infancy. Chilblains, both heels, injury negative, sunlight sensitivity negative.

Case 70 (Contd.)

F.H. Nil.

P.T. Nil.

X-ray. Chest negative. Sinuses: Thickening of lining membrane of left antrum is present.

Mouth and Throat. Gums pale, spongy and bleed easily. Swab: Vincent's Spirillae and fusiform bacilli. Throat: healthy - Streptococcus Viridans cultured.

B.S.R. (1) 25, (2) 12, (3) 2.

M.R. 1/10,000 negative, 1/1,000 negative.

O.R. No reaction with any ointment.

T. Sulphatriad ½G q.i.d. for alternate five day periods.

P. Only one tablet was given four times a day. Response of the lesion to treatment was early and after two months, all erythema had gone from edges and the pale centre showed the start of scar formation. After four months, all trace of activity had gone. Edges were brownish and centre showed depigmented but sound thin scar tissue. On completion, all staining had disappeared and lesion was healed.

Result. 21/9/49. Cured.

S.O. No evidence of reactivity after ten months observation.

Case 71. W.F. M. 32 years.

P.C. 6/3/48 There was a single large lesion of the disease at the tip of the nose. The borders of the patch were raised, infiltrated and very erythematous. The centre measured three quarters of an inch in diameter and was covered with dilated follicles and heavy adherent greyish scales. Seborrhoeic lesion. Duration: One year.

P.H. Childhood ailments only. Chilblains negative, injury negative, sunlight sensitivity positive.

Case 71 (Contd.)

F.H. One brother has Pulmonary Tuberculosis. Living at home and under treatment for two years.

P.T. Nil.

X-ray. Chest: There was a healed fibrotic Tuberculous focus in right apex. No evidence of recent activity. Sinuses negative.

Guinea-pig innoculated: No evidence of Tuberculosis present at post mortem three months later.

Mouth and Throat. Healthy. Throat Swab: Negative.

B.S.R. (1) 18, (2) 18, (3) 7.

M.R. 1/10,000 positive.

O.R. Slight to Tubercle ointment.

T. Calciferol 150,000 I.U. daily. Mapharside 960mgms.

P. There was no response to Calciferol treatment after three months, and so Mapharside therapy was substituted. On completion of the first course, the result was disappointing as only scaling had ceased. During the second course, the response was much more rapid and by the sixth injection, the lesion had been completely replaced by sound although erythematous scar tissue. Treatment was stopped at the patient's request. During the first few injections of Mapharside, there was an acute local exascerbation of the lesion. This gradually lessened and was not accompanied by any constitutional upset.

Result. 19/11/48 Cured.

S.O. No reactivity and scar tissue sound and white after nine months observation.

Case 72. M.T. F. 41 years.

P.C. 6/3/48 There was a circular lesion of the disease on both temporal regions. Both were about one inch in diameter with well defined, slightly infiltrated, erythematous borders and smooth glistening centres with dilated

Case 72 (Contd.)

follicles and a few adherent thin silvery scales. There was another patch of the disease on the left cheek. This was one and a half inches in diameter and had a similar appearance. The lobes of both ears were violaceous and showed definite telangiectases and slight scaling.
Erythematous lesion.
Duration. Three years.

P.H. Quinsy aged twenty eight years. Repeated attacks of Tonsillitis since then. Chilblains negative, injury, sunburn, sunlight sensitivity, negative.

F.H. Nil.

P.T. Nil.

X-ray Chest and Sinuses: Negative.

Mouth and Throat. Tonsils enlarged. Glands palpable. Throat swab: Positive for Haemolytic Streptococci and Streptococcus Viridans.

B.S.R. (1) 21, (3) 20.

M.R. 1/10,000 negative, 1/1,000 negative.

O.R. No reaction to any ointment.

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. Treatment was stopped after four months as there was absolutely no change in the clinical appearance of the lesions.

Result 31/7/48. No change.

Case 73. A.McI. F. 36 years.

P.C, 12/3/48 There were two small areas of the disease on the left cheek which were about half an inch in diameter and were well defined, non-infiltrated, erythematous plaques. The centres were smooth, paler in colour and showed widely dilated follicles. On the dorsum of the middle and index fingers of both hands, there was a well

Case 73 (Contd.)

marked quadrangular lesion. The lesions were violaceous in colour with poorly defined but infiltrated borders and surfaces showing widely dilated follicles.
Erythematous lesion.
Duration: Six months.

P.H. Rheumatic fever aged eighteen years. Chilblains, negative, injury negative, sunlight sensitivity positive.

F.H. Nil.

P.T. Nil.

X-ray. Chest and Sinuses: Negative.

Mouth and Throat. Healthy. Throat Swab: Positive for Streptococcus Viridans

B.S.R. (1) 24, (2) 11, (3) 5.

M.R. 1/10,000 positive.

O.R. Definite to Streptococcus Pyogenes. B.S.R. = 30mm..

T. Sulphatriad 1G q.i.d. for alternate five day periods.

P. During the first course of tablets, there was a local exascerbation of the lesions. This was not accompanied by any constitutional upset and settled rapidly during the non-tablet periods. By the end of two months treatment, the lesions on the cheek had almost completely disappeared and the hands had greatly improved with the complete loss of all infiltration. After four months treatment, a few dilated follicles remained on each middle finger. All trace of other lesions had gone except for a small area of scar tissue on both index fingers. On completion of treatment, all trace of activity had disappeared and the lesions were soundly healed.

Result
2/10/48. Cured.

S.O. No recurrence and scars on hands remained sound and intact after nine months observation.

Case 74. A.T. F. 32 years.

P.C. 20/3/48. Multiple widespread patches of the disease on both cheeks, nose, chin and both sides of neck below the ears. The lesions varied in size and were bright red in colour, sharply defined almost circular plaques. Centre was not depressed and was covered with dilated follicles. Slight silvery scaling was present in some areas. In all, ten lesions were present on the face. A small lesion one inch in diameter was present on the vertex of scalp. This was sharply defined and the surface was covered with telangiectases and associated with hair loss.
Erythematous lesion.
Duration: Eighteen months.

P.H. Pneumonia aged twenty six years. Chilblains both feet, injury negative, sunlight sensitivity negative.

F.H. Nil.

P.T. Nil.

X-ray chest: Calcified primary Tuberculous complex was seen in the base of the right lung associated with numerous calcified broncho-pulmonary glands in both hili. Sinuses: Negative.

Throat and Mouth. Healthy. Throat swab: Positive for Haemolytic Streptococci.

B.S.R. (1) 40, (3) 38.

M.R. 1/10,000 positive.

O.R. Slight to Tubercle.

T. Calciferol 150,000 I.U. daily. Mapharside 300mgm.

P. There was no response to a three months course of Calciferol and so Mapharside injections were started. These however had to be abandoned after the fifth injection as the patient experienced very severe nausea and vomiting for twenty four hours after each injection. Vitamin C in large doses and the usual fasting routine did not stop this toxic reaction. The lesions had only responded slightly to treatment.

Result 28/8/48. Slightly improved.